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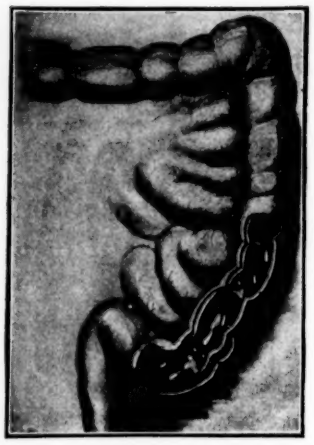

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Simultaneous Traumatic Dislocation of Both Humeri

AIMÉ PAUL HEINECK, M. D.

Chicago, Ill.

Simultaneous traumatic dislocations of both humeri form the subject matter of this paper, based exclusively upon the analytical study of all cases (fifty-eight in number) reported in the English, French and German literature from 1836 to 1923, supplemented by the clinical observation of one personal case. All the cases were (a) in location, bilateral; (b) in occurrence, simultaneous or immediately successive, and always caused by the same accident; (c) in nature, complete; (d) in causation, unquestionably traumatic.

We have discarded cases of habitual dislocation. Habitual or recurrent dislocation is a condition of joint instability characterized by repeated, frequent and complete abnormal separation of contiguous joint surfaces. It occurs upon slight provocation and is often consecutive to a traumatic dislocation.

Incomplete, congenital, pathological, or spontaneous dislocations and those that were not simultaneously bilateral, are outside of the scope of this paper.

Bilateral shoulder dislocations occur in both sexes and at all periods of life. They are more frequent in males than in females.

The external violence which dislocates the humerus in adults, in children commonly gives rise to elbow dislocations, to fractures of the clavicle, to humeral epiphyseal separations. Bilateral shoulder dislocations are very rare before the twentieth year. In advanced life, shoulder dislocations are equally rare.

Bilateral simultaneous shoulder dislocations are either caused by external violence, direct or indirect, or by muscular action, acting singly or co-jointly. Violent shocks or wrenches acting simultaneously on the two arms can produce simultaneous bilateral shoulder dislocations. In five cases (1, 2, etc.) it was definitely reported that the dislocations were caused by violent muscular contractions incident to epileptic convulsions. In case 3, puerperal convulsions were the causative factor. In five other cases muscular action also was the provocative force. My patient fell from a ladder, striking the ground with both hands, arms and forearms being fully extended.

From the standpoint of prognosis and treatment, shoulder dislocations can be classified into recent and old. Dislocations become old through faulty diagnosis, faulty attempts at reduction and often through surgical neglect. In old dislocations, the articulation itself and the peri-articular tissues are the seat of structural changes. The anatomical relations of the head of the humerus and of the glenoid cavity are altered. The glenoid fossa may be partly or wholly obliterated by cicatricial tissue, calcified cartilage, etc. In old dislocations the various bloodless manipulative and other non-operative procedures are often, owing to these changes, powerless to effect either an anatomical or a functional cure.

There are several anatomical classifications in current use. Lack of uniformity in nomenclature is regrettable, is misleading. The exact anatomical relations of the displaced head are either not given or unqualified expressions as "backward" or "downward" displacement are used.

In thirty-six cases both dislocations were of the same anatomical type, and were symmetrical or closely symmetrical. In case 4, a double "luxatio erecta," the humeri were fixed in vertical elevation, both glenoid fossae were empty, both shoulders presentd a distinct hollow beneath the acromion process, and in each axilla the humeral head could be palpated as a hard, globular mass. In a bilateral subclavicular dislocation (5) each humeral head was lying against the second and third ribs, just below the clavicle. In case 6, a bilateral intra-coracoid dislocation, the head of each humerus could be felt to the inner side of its cor-

*The numbers in the article refer to illustrative cases, for which see the bibliography.

responding coracoid process; the inward displacement was more marked on the left side. Case 2 was a bilateral and symmetrical subspinous dislocation, each humeral head being palpable beneath the spine of its corresponding scapula.

Different reporters use unlike terms to designate like displacements. The description given in the case reports does not enable one to differentiate subglenoid dislocations from those termed axillary. Nevertheless, we use here the nomenclature found in the original publications. In two cases (7, etc.), the reporters state that the head of the bone was displaced into the axilla. In my case, the head of the bone was palpable on each side immediately below the coracoid process of the scapula.

In six cases the dislocations were bilateral and in the same general direction, but dissimilar in anatomical type. A subglenoid and a subcoracoid dislocation were present in three cases (8, etc.). In case 9, the left humerus was displaced into the axilla, the right under the clavicle. In case 10, the left humeral head rested on the anterior margin of the lower border of the scapula just below the glenoid cavity, and the right humeral head was prescapular, lying between the anterior surface of the bone and subscapularis muscle. Case 11 presented a subcoracoid and an intra-coracoid dislocation.

In shoulder dislocations, the articular and periarticular soft tissues are contused, lacerated and infiltrated with blood. The synovial fluid is blood-tinged and increased in amount. A tear of the joint capsule, through which the head of the bone has escaped from its normal habitat, is present in all cases. The greater frequency of forward and downward displacements is due to the fact that the capsular tear is usually on the anterior and inner portion of the joint-capsule at its lower aspect. The capsule at its lower portion is not reenforced by any ligament or muscle. The capsular tear and the untorn portion of the joint capsule control, determine in a large measure the type of displacement. Sometimes there is a detachment of the subscapularis, the teres minor, the supra- and infra-spinatus muscles, singly or together, form their insertion. At times a bony fragment consisting of the outer shell or cortical layer of the humerus is torn off with these muscles. Fractures of either the greater or lesser tuberosities are not uncommon. They vary in extent, may constitute a formidable obstacle to reduction and predispose to reluxation.

The diagnosis of these fractures is difficult because the detached fragment cannot often be felt and crepitus cannot often be elicited. A valuable aid to diagnosis is the radiogram; but one must bear in mind that a torn subdeltoid bursa full of clotted blood may, by throwing a shadow, simulate a bone-fragment.

The following associated injuries are recorded: Bilateral fracture and detachment of the greater tuberosities, fracture of the right coracoid process near its base, compression of the axilary nerves and vessels, contusions of various portions of the body. They complicate the prognois. As distal, though not related, associated injuries, the following are reported: Skull fracture, fracture of the lower third of the femur, compound fracture of the middle of the left leg, complete (bilateral) dislocation of the jaw, gangrene of right foot. Fracture of the surgical neck of the humerus was not present in a single case. It is not rare in unilateral dislocations.

Some symptoms are common to all shoulder dislocations: Pain, loss of function, rigidity, patient is unable to use his arms. In my case the loss of function and joint-rigidity were complete. There are symptoms that occur only in certain types of displacement: the location of the humeral head, the position of the elbow, etc., differ in the various anatomical forms. In complicated cases, one finds, in addition, the alterations of function, of structure and of contour due to the co-existing injuries.

In all bilateral shoulder dislocations, note the direction of the axis of each humerus, note the relations of the bony landmarks of the shoulder region, note the extent of functional impairment and the degree or range of joint-mobility. Any deviation from the normal is symptomatic of underlying pathology.

In unilateral dislocations, to establish a diagnosis, one compares the injured shoulder with the unaffected. In bilateral dislocations, the clinician cannot avail himself of this aid as both shoulders are, most always, symmetrically deformed, the measurements of both sides often not differing half an inch; at times they are similar. In my case, the measurements of both arms were practically identical. Secure full exposure of both shoulders by divesting the upper portion of the chest of all unnecessary clothing.

The rotundity of the shoulder depends partly on the head of the humerus being in its proper place and partly on the integrity of the deltoid muscle. Therefore, in all inward, downward or backward displacements of the head of the humerus, the normal contour of the shoulder is lost and there is present a double deformity: a distinct flattening of the shoulder region, due to the absence of the head of the bone from its normal place, and an abnormal bulging due to the presence of the displaced head in its new habitat. In dislocations, the deltoid slopes straight from the acromion, or sinks in, having an indented appearance at its insertion. An empty glenoid cavity and abduction of the arm accompany all shoulder dislocations. The roundness of the shoulder is not present.

In all shoulder dislocations, the head of the bone can, by painstaking inspection and palpation, invariably be detected in an abnormal location.

In all dislocations of the head of the humerus there is a distinct hollow or hiatus beneath the acromion process, this hiatus being less noticeable in subacromial dislocations.

In old and recent dislocations, the deformity is so characteristic that the diagnosis is often made by inspection and palpation. In obese and muscular individuals, exact diagnosis is more difficult.

In all cases, it is advisable to have both shoulders radiographed. The radiograms serve as a record, as a guide; they often clear up many unsuspected conditions, and establish the diagnosis upon an indisputable basis. Radiograms show the exact location of the humeral heads, reveal the presence or absence of complicating osseous lesions: fractures of the humerus, of the surgical neck and coracoid process of the scapula. They remove doubts from the clinician's mind. Stereoscopic pictures are less liable to misinterpretation.

Complicating injuries of the nervous system are evidenced by motor, sensory and trophic disturbances. Some of these nervous lesions are irremediable; others, such as contusions, compression, stretching and division (partial or complete) give, under appropriate treatment, a hopeful prognosis. At the first examination, one should exclude an involvement of the circumflex or other nerves; sometimes the

nerve involvement affects all the muscles of the upper extremeity. In non-reduced cases, the nerves may be compressed by scar-tissue. By taking the pulse, one is enabled to ascertain the presence or absence of important vascular injuries.

Recent dislocations are reducible or irreducible. Primary irreducibility is usually due to some complication. Associated fractures, detachment of either humeral tuberosity, especially if the detached fragment lie in the glenoid cavity, hinder reduction, predispose to recurrence. The indication to suture or nail the detached fragment to its normal place may prevail.

Recent dislocations call for immediate reduction. At the outset, let us emphasize that the treatment of choice is non-operative. In the treatment of shoulder dislocations, operation is a last resort.

Anesthesia (chloroform, ether, etc.) facilitates reduction, it abolishes pain, it overcomes muscular spasm and the patient's resistance; with its aid, one can by gentle manipulation gradually break up adhesions opposing reduction. It is especially serviceable in muscular individuals.

In nineteen cases (8, 9, etc.), non-operative methods, unaided by anesthesia, successfully effected reduction. In some cases, one humerus is easily reduced without anesthesia, while the reduction of the other necessitates anesthesia. In twelve cases, to effect reduction, non-operative methods had to be supplemented by general anesthesia. In my case, to secure reduction, the patient was etherized.

In many cass, the clinicians noted the occurrence of a peculiar jerk, of a distint audible snap upon return of the bone to its socket (8). Instant relief from pain often follows reduction.

Among the non-operative methods, Mothe's method was used in one case (11), Kocher's method in ten cases (12, 13, etc.). In twenty-seven cases reduction was effected by various bloodless manipulative procedures supplemented by extension and counter-extension (7, etc.) The extension is made by the operator, his assistants, weights or pulleys, counter-extension, by axillary pads, by heel in the axilla (8, 9, etc.).

After reduction, the shoulder must be immobilized long enough to allow the repair of the capsular tear. It is also imperative that passive and active motion, and massage, be instituted early enough to avoid ankylosis.

The treatment of old dislocations requires great care, requires individualization. In old dislocations, the difficulty of reduction is due to various factors: Cicatrization and contraction of the capsular tear, inflammatory adhesions binding the head of the humerus to the surrounding structures, obliteration of the glenoid cavity, adhesion of the joint-capsule to the periphery or to the entire glenoid fossa, interposition of tendon or muscle, etc.

Some old dislocations are amenable to bloodless manipulative procedures, others require operative aid. Though not always successful, the former should always be first attempted; successful bloodless manipulative methods secure better functional and anatomical results than operative treatment. When manipulation, traction by pulleys, etc., supplemented by anesthesia, fail to obtain reduction, operation, if not contra-indicated, is to be performed. Arthrotomy permits direct inspection of the articulation and of the contiguous structures. It enables the operator to determine, to remove obstacles to reduction.

Unreduced dislocations are accompanied by deformity and disability, varying in degree, but permanently impairing the earning capacity of a handworker. Operative treatment has a very low mortality, almost nil, and though final results are not always perfect, pain and circulatory disturbances are relieved. There follows a very fair restoration of function.

In elderly people, forcible attempts at reduction of old shoulder dislocations has fractured the humerus. Atrophy, adhesions of the surrounding muscles and soft parts and adhesions of the torn joint-capsule, all these tend to make, at times, reduction by manipulation difficult, impossible, or extremely dangerous.

Do not resort to a cutting operation unless you are convinced of the futility of further use of non-operative procedures. In the young, reduction is more easily effected, presents less difficulty than in adults, and bloody intervention is rarely justified.

The incision giving access to the articulation may be made along the posterior or the anterior axillary fold. All cicatrical bands impeding reduction are cut, muscles preventing reduction are divided and subsequenty sutured. The head of the bone being replaced into the joint-capsule, the latter is closed as completely as possible.

The prognosis in bilateral shoulder dislocation is influenced by many factors, chief among which should be mentioned age of the patient and of the dislocation, the patient's occupation, the associated injuries and the treatment instituted. As a rule, the older the patient the longer the period required for recovery. As to the age of the luxation, it is agreed that dislocations call for immediate reduction. Sequelae are thereby forestalled; nothing is gained by delay. Convalescence is longer in handworkers than in intellectuals; delicate hand movements are late in returning. Associated injuries require appropriate treatment. In some cases full function is not restored before the detached muscles or tuberosities are permanently fixed in their normal place.

Bloodless manipulative methods, supplemented by electro-, mechano- and hydro-therapy give the best results. The two dislocations, right and left, are reduced separately, usually by the same method and at the same sitting. The duration of immobilization varies in different cases: 12 days, 5 weeks, etc. We are of the opinion that most clinicians err in prolonging complete mobilization beyond two weeks. About the tenth day gentle passive motion and massage and electrical treatment should be instituted.

After an arthrotomy and division of extensive adhesions, even though the bone is replaced to its normal position, some joint-stiffness is to be expected. This is generally compensated for by increased mobility of scapula. The restoration of the rotundity of the shoulder and the absolute relief of pain give much satisfaction to the patient.

After reduction of the dislocations, both shoulders are immobilized, wedge-shaped pads placed in the axilla, the arms fixed in front of the chest by adhesive plaster, bandages, etc. The patient is practically helpless; he cannot feed himself, he cannot dress himself, he cannot attend to many of his other needs; he must be provided with an attendant until recovery is effected.

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(Concluded on page 237)

Urologic Physical Examination

VICTOR COX PEDERSEN, A. M., M. D., F. A. C. S.
New York.

In the following series of notes on urologic diagnostics, pathogenesis, treatment and procedure the endeavor will be to enforce so many practical points as possible within brief space arising from experience in consultation work and based on apparent unfamiliarity on the part of many family physicians.

The circumstances of this unfamiliarity are readily comprehensible on the ground that no one human being can today be master of all details in several branches of medical art and science. The urologist is as much at disadvantage in the field of lung and heart disease except on general principles as the general practitioner is in the renal, ureteral and vessical fields except on general principles. The details are necessarily in the mind of the specialist and must be supplied by his various writings in books and journals.

The physical examination of each urologic case is a matter of regular procedure. The patient as in a lung or heart disease must be subjected to inspection, mensuration, palpation, percussion and auscultation in regular order. It is surprising how many unsuspected and important explanations of peculiar conditions are elicited in this way. Again similar to the method of the neurologist who rests his diagnosis on such details as the superficial and deep reflexes, changes in sensation to touch, pain and temperature, trophic signs and the like, the urologist must omit no detail in terms of physical, instrumental and laboratory examination.

The sexual organs of both sexes and of all ages must be examined so as to include all and omit no data. In the male, the writer systematically uses the following order: foreskin, glans, meatus, urethra, scrotum, penile body, testes, epididymes, vasa, cords, seminal vesicles and prostate. In the female, the serial steps are laba majora and minora, vulvovaginal glands, urethra, vagina, cervix and urterus, tubes, ovaries, and appendages. In both sexes the bladder, ureters, kidneys, urine and other laboratory specimens and finally the general constitution must be considered, because the urinary organs are so intimately part of the general symptom complex. The examination of the urinary organs will be suggestively discussed in the next contribution.

The following case illustrates the importance of step-by-step examination. A woman with active cutaneous secondary syphilis, vigorously and offensively denying sexual promiscuity presented herself for examination. No chancre was discovered until, after exhaustive examination of every other part, the foreskin of her clitoris was somewhat forcibly retracted so as to uncover a small but definite primary lesion. She then withdrew her falsehoods about sexual familiarities. Unconvinced by a defective diagnosis, if I had failed in my work, the woman might have transferred the disease to an indefinite number of unsuspecting associates innocently, or maliciously.

According to sex we therefore are on the alert for even slight signs of edema, cellulitis, involvement of the scrotal content or pudendum, ulceration or other breaks of the surface of the skin or mucosa, inflammation of the lymphatic channels and glands, urethral discharge and the like. Too often the limits and origin of discharge are not studied and thus the distinction between pus from the prostate, bladder, ureters and kidneys is often supposed to be from the urethra itself. Junior members of hospital staff and private practitioners are quite often likely to miss the distinction between surgical and nonsurgical cases in this way. The slightest question leads to the necessity of urethroscopic, cystoscopic and other advanced means of investigation. Among these not the least important is the seven-glass test properly performed. A later article will deal with this subject.

Palpation follows the foregoing details of inspection, and is made with the finger externally along the urethra and internally in the vulva and vagina, or in both sexes in the rectum. Instrumental exploration is usually of the internal type only. Thus in the male, the source of chronic urethral discharge may be located in nodules, thickenings, strictures and general enlargement and the bulb, posterior urethra, Cowper's glands, prostate and seminal vesicles are reached through the rectum. The patient assumes the standing, or lithotomy position by preference and more rarely the knee-chest or right or left lateral. It must be remembered that the roof of the urethra cannot be reached by ordinary palpation because of its buried relation to the angle between the two corpora cavernosa.

Each organ or its subdivision is in turn recognized as to consistency, size, circulatory changes, tension, fluctuation and the like. Lateral pain during rectal examination usually means prostatic involvement while central pain may indicate this or urethral lesion. Further examination is indicated in all such cases. The following is a case in point: A patient was suspected of rectal obstruction because he had pain in the lower pelvic region and ribbon stools. The family doctor had not investigated the urinary system properly. What the patient really had was a large infected prostate, painful, sensitive and obstructing, and further very easily recognized by a proper rectal, urethral, and urinary investigation.

In the female regular and serial steps must be taken beginning with inspection of the external organs and ending with deep palpation of the internal organs, by any method so long as it is consistent, inclusive and thorough. The method of passing from part to part is already indicated in one of the earlier parts of this paper. The feature of fixation of the uterus, especially in mild degrees, is of considerable importance, particularly when the wise course of monoperative electrotherapeutic measures is to be followed in preference to operative measures. The writer feels that no uterus should be called fixed which does not maintain more or less the same relation to its environment in each of the following positions of the patient: lithotomy, knee-chest, right and left lateral, and standing. The first two are quite familiarly used, but in the observation of the writer the lateral and standing postures are almost totally neglected. If one perserveringly compares the excursions of the uterus produced by these changes in position, many cases which were thought to be adherent are shown to be less so and therefore operation is avoided. If the average operator were a patient, it is safe to say that he would be glad to have great detail in examination followed.

(Concluded on page 237)

Arterio-sclerosis of the Kidney

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The line separating functional activity of the renal cell from degenerative change in the kidney remains obscure. The point of beginning arterio-sclerosis in the kidney is an occult expression, for clinical recognition of the process and the difficulty besetting the pathologic recognition of its early presence, often serves to confuse the most adept.

Arterio-sclerosis is due to a low grade toxemia. It exhibits a progressive degeneration as a chronic inflammatory change in the vascular system. This may be local or general, and while derived from many recognized sources, in the main, it is attributable to syphilis.

In the kidney the process may act singly, or it may associate with other degenerative change designated as nephritis, but the term vascular nephritis as formerly applied to changes of this nature in renal substance is misleading, as all nephritic change refers directly or remotely to the blood supply.

Three lesions, separate or combined, are recognized as constituting nephritis. As well, these pertain to production of arterio-sclerotic change in the kidney. In reality these changes are inter-related, being exerted upon the arteriole, the tubule and the glomerulus.

The very nature of kidney function reveals that co-ordinate relations exist in any alteration in kidney function from structural change.

Any kidney substance suffering attack extends damage to and involves other renal substance. Interstitial nephritis does not exist without the parenchyma suffering, and an attack upon the parenchyma embroils interstitial integrity. Diffuse nephritis always presents in some degree in any inflammatory or degenerative solution of kidney structure.

Recalling that interstitial structure supports the tubules and conveys the arterioles, that the parenchyma designates the secretive or lining cells of the tubules, and that the glomerulus of capillary maze and the capsule of the originating tubule combine as a single lesion in any attack, we perceive that inflammation produces an exudate of serum and connective tissue cells in reference singly to the arteriole or capillary, for the parenchyma having no blood supply, is not subject to inflammation, only responding to degenerative change. Inflammation of the arteriole creates toxines, which must be excreted through the process of parenchymatous function, the degeneration of the tubules so produced affecting the wall of the arteriole close at hand, a vicious relationship results, co-incidental lesions occur and persist.

This readily solves the question of cast production and progression through the activity of the tubule. Green and Wood agree that hyaline and granular casts existing alone signify a relation to infection, to acute and chronic intoxication and indicate passive congestion of chronic type as being the initial state of both interstitial nephritis and arterio-sclerosis of the kidney.

It is rational to believe that the hyaline cast of simple form becomes a support for other cast development. In being plastic or mucoid, its alteration shows departure from normal parenchyma, degeneration initiating removal of epithelial cells, which attaching to the adhesive hyaline base, transforms the picture. Cell restoration follows control of the infection, but recurrent attacks flatten the cells of the tubules, which finally refuse the office to replace after sufficient progressive detrimental effect occurs.

Cast development traverses intercurrent stages to finally appear as waxy, indicating the terminal stage of chronic interstitial change, which Green designates of evil import in contracted kidney, indicating death shortly.

Toxic irritation of the wall of the afferent vessel to the glomerulus, occasions arterio-sclerosis. Occlusion of the arteriole with cells, thrombi and degenerative products results. Capsular stasis occurs with consequent filling of the lumen and degeneration of the parenchyma. The circle established renders it difficult to determine whether it is an initial glomerular attack with ensuing arterio-sclerosis or whether it is the reverse that occurs.

Contraction follows upon maturity of connective tissue. The interstitial attack shrinks kidney substance, producing minute or larger granules distributed over the cortex, adhering when the kidney capsule is stripped, as revealed by comparing the unaffected portion of the smooth cortex. Within the kidney substance, these granulations shown as yellowish, fibrotic streaks scattered through the cortex, are revealed as arterial walls degenerated into sclerosed, thickened vessel remnants. The capsule is thickened upon the usual findings of small, tough, firm and fibrous textured kidney. The kidney markings may be dissolved, the prominence of the arterioles created through the process of attack designating the condition as arterio-sclerosis. If the process be simple, the attack is limited to the afferent vessel without invading the glomerulus. The simple form often expresses all of the determinable sclerotic manifestation of the entire economic vascular system. If a hemorrhagic exudate occurs, it does not tend to extend inward from the apical epithelium, tho infarct production is fairly common in the kidney.

The process advances slowly, the non-progressive nature being shown in the interrupted bombardment of the cell through repeating attack, perhaps delayed for some interval. Each assault may be checked by economic response to the hazard, eventually localizing with irreparable damage which limits the battle ground of required defense to the affront to the renal cell. Glomerular buds and areas of tubules suffer at each intercurrent attack, more and more tissue sacrifices, permanent changes being frequently unrecognized until the badly involved kidney confronts the physician who now realizes a necessity for governing the remnant of functional structure. This describes the common type of arterio-sclerosis of the kidney.

Luetic arterio-sclerosis of the kidney is unrecognizable if there is eliminated the pathology of structure anatomically remote to the kidney. True syphilis of the kidney is appreciated only by the presence of gummatous deposits with secondary fibrosis. This complicates the recognition of syphilitic pathology, for evidence of syphilis is often so cleverly concealed in an infected individual, that a critical survey is required before the status of the sclerotic kidney is determinable.

Years ago Osler showed that the arterio-sclerotic kidney is heavier than other varieties. We understand why both large and small kidneys occur with sclerosis of renal substance through location of the fibrotic attack and diffusion of deposit.

Degeneration of tubules or parenchymatous kidney means a large kidney with increase of urinary production, frequently presence of albumen and a high specific gravity. This may be a kidney of pregnancy with pressure hyperemia producing albumen leakage, a chronic passive congestion active in advancing a tubular nephritis as a beginning arterio-sclerosis.

Most authority now believes that chronic interstitial nephritis is always an arterio-sclerosis. The terms, gouty, cirrhotic, granular, sclerotic, chronic diffuse, chronic interstitial, etc., express the same process directing to a recognition of arterio-sclerosis of the kidney.

An editorial in a recent number of the Journal of the American Medical Association says: "With respect to the causation of chronic nephritis, Newburgh has well summarized two outstanding convictions; . . . that some contracted kidneys are the end stage of acute or subacute nephritis of bacterial origin, and that nearly all of the remaining cases are intimately related to arterio-sclerosis and cannot be properly understood unless the two processes, the sclerosis of the vessels and the sclerosis of the kidneys, are studied together."

Interstitial nephritis is always associated with some general, but perhaps undeterminable sclerotic change. In the combined findings in especial do we see low pressure with clinical evidence indicating seriousness of kidney attack. A high diastolic pressure as above 100 MM, combined with a low systolic pressure, is very significant of acute interstitial nephritis. Primary contracted kidney probably exists when a hypertension and general arterio-sclerosis associate, for commonly arterio-sclerosis of the general circulation exists without hypertension.

Secondary contracted kidney is misnamed. The interstitial element predominates. The pathology is indefinite, the diagnosis to a great extent, is dependent upon the greater cardiac and vascular change than is that of other arterio-sclerotic forms. A blood pressure of 170 MM with few symptoms other than that from frequent passive congestion, results in this condition, as is shown by the presence of the hyaline and finely granular casts mentioned.

Copious urine, annoying nycturia, low specific gravity, usually slight drainage of albumen with a persistent hematuria of greater or less amount, designates contracted kidney. In reality, all secondary contracted kidneys mean that the parenchyma is affected first, followed by an interstitial attack, which contracting the tubules, makes cortical nodules more prominent than in the primary interstitial form. This would seem to clarify the claim that the true arterio-sclerotic kidney is large, for the latter, a parenchymatous attack, displays an arterio-sclerotic change preceding a later contraction from any interstitial deposit.

Blood pressure constantly in excess of 170 MM systolic, suggests chronic interstitial nephritis, a decided and persistent hypertension with relative high diastolic level, is almost diagnostic, despite an absence of albumen and casts. Advanced interstitial or diffuse nephritis always increases arterial pressure to anywhere from 170 MM to the rarely found 300 MM, this tension with an accompanying high diastolic, preceding any urinary findings of value.

Focal renal sclerosis is difficult of diagnosis. Just as serious arterial degeneration may exist within the general circulation without revelation of its presence, an identical condition applies to arterio-sclerosis in the lesser circulation of the kidney. The focal form gives normal sized kidneys with irregular and scattered induration existing as depressions upon the renal cortex. Urinary signs are few and absent over long periods of time, perhaps never showing, making dependence upon the presence of general arterio-sclerosis necessary to anticipate the focal form with its irregularity of deposit as present in the kidney.

Arterio-sclerosis follows no rule in developing in the general or renal circulation. There appears no way of determining any distinction between an arterio-sclerosis of simplest form in an otherwise normal kidney and the type that accompanies a badly involved kidney.

Arterio-sclerosis may be presumed to be present in all kidneys of elderly people. This condition often exists here without any nephritic findings being disclosed, there being lacking the retinal changes and the systemic anemia that accompanies glomerular involvement. The senile and atrophied kidney lacks the interstitial degeneration, arterial changes or capsular adhesion that presents in interstitial sclerosis. A pressure not in excess of 170 MM usually presents when there is no associated renal and general arterio-sclerosis.

Both large and small kidneys occur with renal arterio-sclerosis, making it hazardous to prophecy as to which form presents in any single instance.

Hematuria, presumed to designate excess of parenchymatous involvement, is misleading, because interstitial and glomerular forms show exudate of blood in the urine. Longevity of nephritic history decides against glomerular changes as initiating the degeneration found.

Chronic glomerular nephritis is a term which should be abondoned. It is loosely applied to a mixed type of tubule and glomerular attack with an excessive degeneration of the glomeruli, all ultimately becoming a typical interstitial form.

The combination of general and renal arterio-sclerosis is apt to produce a vicious state, for this condition with chronic toxemia and hypertensive arteries, there being demanded an increased muscular display in a heart already degenerating, threatens a speedy termination. Here dilatation lowering a high blood pressure may prevent a cerebral catastrophe.

Hereditary influence in arterio-sclerosis is not questioned today. Renal toxemia originating Bright's disease impairs function, the continued or recurring toxic state producing arterio-sclerosis to very often accompany.

The hereditary influence is shown in young men, youthful in years but old in arteries, usually possessing small kidneys enclosed in thickened capsules, adherent to the cortex, destruction of tubules and glomeruli following upon a contraction of interstitial attack. The oculist may first locate the condition by evidence found in retinal change. Lower lid fulness extending over a term of months or years may reveal the diagnosis. Urinary disclosures are often absent, reminding that single specimens are never conclusive evidence.

Secondary and slowly contracting kidney comes from repeated toxic or infective attacks as focal or chronic infective process. These often originate in teeth, tonsils, sinus or other recognized focal localities. It is often astonishing to perceive how rapidly renal lesions due to these infective foci disappear upon even late removal of the nidus of attack.

In quite youthful persons arterio-sclerosis of the kidney is often the result of otitis media. This has been conclusively proven. Typhoid fever may cause the lesion in the kidneys. It proves to be a pernicious element through the influence of a presumed dormantly held bacillus. The colonic flora are dangerous hostages, in especial when we find infection exists over long periods from overlooked lesions of the colon, sigmoid and rectum, and the frequent infection of the upper urinary tract so frequently due to the colon bacillus, and which becomes a focal infective cause for arterio-sclerosis of the kidney. Combined infective lesions may exist as in pyorrhoeal or other lesion and a colon infective lesion active in the kidney as a pyelitis at the same time.

Toxemia results from chronic gonorrheal presence or from retention products deep in structure. The protracted and seemingly inocuous leucorrhea, through vaginal infection or conveyance, has its influence in producing degenerative change in the kidney. Arterio-sclerosis and interstitial nephritis, either or both, result from pathologic change in the kidney from lead, a common lead damage. Here high systolic and low diastolic pressure is prominent. Forty per cent of lead workers show high diastolic with slow pulse. An excessively high pressure as 250 MM to 300 MM with obscure cerebral symptoms and renal change, becomes highly significant of lead poisoning. Increased pulse pressure may be looked for in this form of kidney sclerosis unless a complicated change in kidney structure presents. Corroborative evidence of lead attack may be shown in a painless neuritis or arthritis. The rapid development of the rubber industry and the employment of youthful persons in manufacture in rubber factories, engages our attention for more youthful development of arterio-sclerosis in the kidney than ever before, for crude litharge is freely used in manufacture of rubber goods.

Arterio-sclerosis produces many casts in the urine. We are questionably informed that alcohol has little effect in producing arterio-sclerosis, that the blame formerly attributed to alcohol was in reality due to syphilitic infection with which the alcohol habit was so frequently associated. However, we are aware that alcohol indulgence produces so intense an irritation of the renal tubule that loosening of a host of casts is common, which clears up without provoking apparent damage as soon as the metabolic products of alcohol are expelled. Green tells us that the sneak drinker is often to be detected by the profusion of cast excretion, pronounced albumenuria caused being harmless and overcome.

With all deference to high authority deeming alcohol inocuous here, it would seem unreasonable to suppose that such renal irritant properties as shown, acting as violently as described, could be freed from all element of suspicion of production of permanent damage, to finally become absolved of producing sclerosis of kidney arteriole.

A low red test and high specific gravity indicates arterio-sclerosis of the kidney, especially if there is associated a history of long continued renal trouble with an arterio-sclerosis of the general system accompanying.

Specific gravity of 1.025 in an arterio-sclerotic, a small amount of albumen showing, a low renal output accompanying, does not indicate a hopelessly damaged kidney, for high concentration contra indicates total destruction.

Elderly people showing edema of the ankles, wasting a little albumen or none at all, indicate arterio-sclerosis of the kidney. Often supporting evidence of attack shows in the arteries comprising the Circle of Willis, as edema piae creating mental fog, failing memory, numbness of the extremities, vertigo, perhaps Jacksonian or partial epileptic attacks indicating the cerebral deposit with renal change. Washed off thrombotic placques from fibro-calcareous deposits in the aorta may here produce cerebral emboli.

Prominent temporal arteries and the presence of the arcus senilis does not diagnose arterio-sclerosis today, but retinal changes and glaucoma are invaluable indicators of the change in the kidney, and emphyséma is now recognized as designating arterio-sclerosis in renal structure. Hypertension referring to kidney sclerosis is misleading, although it is a valuable factor in signifying arterio-sclerosis in general.

Headache does not suggest arterio-sclerosis of the cerebral arteries, but a suspicion of a kidney lesion, especially when occurring in youthful subjects. Hypertension, renal revelations, retinal changes, dilated and hypertrophied heart, irrespective of age, indicate arterial change in the kidney. Persistent headache in a young man should not alone call attention to the kidney but should arouse a suspicion of lues. The arterio-sclerotic headache in a young or older man may be regarded as revealed by the early morning ache, appearing regularly, awakening from sleep, indicating a toxic state.

Pulmonary edema with frothy mucus is frequently sclerosis of the kidneys associated with a chronic nephritis. An accentuated second sound of the heart, cardiac changes present, hypertension and urinary findings, locate the disorder. Chronic nephritic cases are apt to show pulmonic inflammation as a chronic bronchitis, winter cough being significant of arterio-sclerosis of the kidney. Differentiation of the varieties of nephritis is difficult on account of the existing inter-relationship. Acute congestion closely resembles acute nephritis, both to be considered together because operating causes being identical in each, clinical evidence submitted by one is quite similar to that produced by the other. The stages of sclerotic development in the kidney pass from the absence of symptoms through mild display as a slight congestion, increased or decreased secretion, absent or heavy albumen production, to the very apparent stages of toxic irritation.

It is now believed by many, that tobacco, especially cigarette smoking, probably from pyridin, (C_5H_5N), has a marked influence in developing arterio-sclerosis of the kidney. We know, too, that it is in the result from, "Venus loves the arteries," rather than in the effects due to the purple grape of Bacchus, that there is created a lack of concern in hardening arteries in the later years of persons who need the admonition in "Wine, women and song."

Arterio-sclerosis often resembles diabetes in elderly people where there is a lack of tissue repair. Here should be recognized a lack of toxin elimination, an insufficient systemic protection betraying nephritic

danger. This may be deemed endocrinal in nature, as an altered calcic balance. The recent work of Leo Burger ably describes arterio-sclerotic gangrene, which adds to an aggravated state. Elderly people with evidence of gangrene should awaken attention to the element of vascular degeneration from sclerosis, with or without an evident glycosuria influencing. Here again, attention is called to the presumed influence of endocrinal secretion in calcium metabolic effect influencing tissue regeneration or nitrogen metabolism affected.

Forms of splanchnic arterio-sclerosis may suggest kidney involvement. Hypertension is usual and dangerous states of distension causing ischemia and intestinal colic from deficient mesenteric circulation, wherein the attacks are aggravated by an existing hypertension, may herald a splanchnic anginal attack in the abdomen. Here recognition should be re-awakened to the aggravation of kidney conditions by occupations which require active muscular effort in the limbs, particularly the lower.

Precordial distress is common when arterio-sclerosis is present. This is more or less constant, of mild or severe grade, aggravated by exertion or by tensive digestive attacks. This precordial pain is very significant as betokening arterio-sclerosis development.

Epistaxis often betrays hypertension. When there is also evidence of laboring heart, suspect sclerosis of the kidneys as present. Symptoms called neurasthenia are significant. Insomnia and digestive disturbances with perhaps an indicanuria point to kidney irritation. Here is very frequently shown a symptom of pain in the lateral or postero-lateral muscles of the neck. The man of activity who shows lessened fatigue, of increased capacity for work in years of middle life, is indicating arterio-sclerotic change. Inability to relax from business, objection to former amusements, insomnia not due to business worries, early awakening as at four o'clock in the morning, to lie awake with intent mind, then to sleep soundly and overlap the accustomed arising time.

Migrainous attacks with perhaps slight neuralgic twinges may appear. There may develop an irritating memory change in forgetting dates, appointments, article placement, or restless states with development of an irritable disposition, all becoming significant of developing sclerosis of the kidney. Aside from these symptoms, or similar ones, recognition of the early deposits of sclerosis in the kidney is very difficult. There is required a close consideration of the history and symptoms, and an appreciation that the very vagueness of the symptoms is suspicious. Losing strength, slowing activities, pronounced effect from slight muscular strain or activity in excess of what the age should warrant, marked physical disturbances from minor causes, ridiculed perhaps as previously having but an unnoticeable effect, all at an age when the condition requires and should show an active possession of superior faculties and judgment, makes the insidious nature of the disorder one of pernicious effect.

Appraisement of conditions through every revelation of value by laboratory findings is valuable, especially for detection of the primary interstitial form in the kidney. Indican presence is a valiant sign of warning, most easily detected, for if continued in the urine, it is seventy-five per cent. efficient as indicating some damage in the kidney.

McLean's "Index of Urea Excretion," unfortunately, is not of practical determination outside of a properly equipped laboratory. It is of extremely valuable application for determining the state of parenchymatous function, an increase of Ambard's coefficient above the normal to any degree, evinces arterio-sclerosis. It is well replaced by the more easily determined red test repeated as required.

Rupel shows that obstruction to any part of the arterial supply of the kidney produced permanent loss of function in the part affected. The blood supply of the kidney is entirely dependent upon the renal artery, despite capsular removal to produce adhesions.

Guer demonstrated that parenteral injections of the crystalline lens into pregnant rabbits produced organo-anaphylaxis and hereditary blindness in the offspring. Degeneration and auto-lysis of any organ or tissue produces inherited damage to the ova of the female as this shows. One readily conceives the results possible to follow from the effect of degeneration of arterial substance in the toxic pregnant woman, with hereditary effect upon the offspring, the idea of hereditary influence from auto-lysis becomes impressive.

Newburgh and Clarkson showed in the feeding of twenty-seven per cent. protein diet to rabbits for six months, that chronic kidney change resulted, attributed to amino acid and acid urine produced, the arterio-sclerosis found being roughly proportional to the period of protein feeding.

Local degeneration and absorption of diseased endocrinal gland substance finds in the offspring deficiency of gland substance of the same or of a related identity, so effecting gland expression. Cummings reveals that the corpus luteum has hypotensive properties and that curtailing this secretion in the menopause permits hypertension.

In the *Journal* of the American Medical Association, February 9, 1924, Fishberg considers thyroid deficiency as a frequent cause of arterio-sclerosis of the kidney, relieving chronic interstitial nephritis, hypertension and albuminuria through a treatment deduced thereby.

Faber concludes that the more sickness that a person has, the more arterio-sclerosis is apt to develop, with evident lack of protection through endocrinal disturbance.

Hypertension existing in certain endocrinal cases where there is no indication of local or general arterio-sclerosis, gives an entirely different viewpoint than that of a hypertension creating arterio-sclerosis, a changed idea in prognosis and treatment results and directs the thought to a remedying of a dysfunction of endocrine expresison. The adrenal and post-pituitary relationship appear to extend a great influence upon the development of arterio-sclerosis in the kidney and general circulation.

Within the past few months, Kuhn of Berlin has announced his belief that silicum in contributing to the normal elasticity of tissue, is lessened in threshold value in arterio-sclerosis, and has evolved a treatment thereby.

Blackman tabulates a series of a large number of cases of arterio-sclerosis wherein he determined a previously infective history. Pyogenic infection, typhoid, pneumonia, arthritis and scarlet fever, in the order named, showed positive sclerosis, resulting in eighteen per cent. of cases in the first named, declining to over nine per cent. for the last mentioned.

Topp reporting one hundred sixty-four cases of hypertension which exceeded 184 MM systolic, demonstrated sixty per cent. as having arterio-sclerosis of the kidneys, of which number eighty-four per cent. died within two years.

The editorial in the *Journal* to which reference has been made, says that Newburgh doubts man's ability to satisfactorily metabolize the high protein diet of today, the kidney not having evolved a function adapted thereto. The *Journal* presents the question of boldness of thought of infection and protein abuse as creating nephritis. It is only fair to believe that the line of argument and search today substantiates Newburgh's conclusion, pointing clearly to its accuracy.

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Milk

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One of the first thoughts which enters the mind of the expectant mother is—"Am I going to be able to nurse my child?"

The first matter to which the attention of a sick person turns, when he or she begins to convalesce, and the appetite begins to assert itself anew—"what may I have to eat "

The last consideration of the attendants, when one beloved is nearing the brink of the great Beyond is—"What can we do to sustain the fast failing strength of the sick one?"

These three inevitable questions and many others which arise at various times during the life journey, may all be answered by one short word—milk.

What is milk? To the living and growing animal, it is practically speaking, life. It comes pretty close to being the substance which answers and fulfills all of the requirements of growth, in the human family; more so than any other one single substance.

It is probably the easiest food stuff to procure, and in its natural state, the most difficult to preserve.

For the nourishment of the human animal, human milk must naturally be held as first choice, although it is of such variable quality that quite frequently it is not adaptable at all.

Next, at least in this great country of ours, comes cow's milk, though in other portions of the world, goats, horses, asses, and other animals are held as the source of the milk supply.

In this present discussion we will confine ourselves to the milk of the cow, as that is in a great majority of the cases the milk upon which we have to depend.

For consumption by the human family, especially the infant portion, which is better—the milk from one cow or the milk from a mixed herd? Where all necessary examinations and tests may be made, at frequent intervals, probably the milk from one cow will prove to be the better. Naturally this statement must refer to the country and other outlying districts where the family cow may be properly kept and fed.

But most milk is used in the large cities and by the suburban population. Especially is this true in the more congested districts, where it always seems there are more babies than elsewhere. Under such surroundings a cow would be like the proverbial bull in the china shop, and under these circumstances there is no doubt but that herd milk is better.

Suppose we have the herd milk and it is a hundred or more miles between the source of supply and the location of the demand. The cows have been milked, and the product is standing about in cans ready for shipment. A large volume could be written concerning the right and the wrong way of the milk business just up to this point.

Have the cows been properly fed and watered? Have they been properly protected from all kinds of weather? Were their barns and stalls clean and sanitary? In other words, were they contented cows? Was the milking done in a sanitary manner? Were the milkers free from contaminating influence?

Was the milk properly cared for in transit, and after being received by the wholesaler? Did the wholesaler deliver a clean product to the retailer? And last but not least, but undoubtedly of the utmost importance, did the consumer properly care for the product after delivery by the retailer? How many opportunities there have been for the milk to receive impurities of various kinds. And we know that milk is one of the best media for the propagation and increase of bacteria.

So far we have been considering the milk supply as it is shipped to the large wholesalers, but how about the dairyman who keeps his own herd and makes his own deliveries to his customers? How difficult it is under such circumstances to procure milk which is uniform either in strength or purity. The quality and quantity will vary in strength or purity. The quality and the quantity will vary from day to day, and it becomes an utter impossibility for the customer to be sure that the supply is in any way uniform.

During the cold season the consumer does not have much trouble in preserving his daily milk supply in fairly clean and pure state. But in the warm weather, and especially in the congested districts of our large cities, it is an utter impossibility to keep the milk sweet for any length of time. If plenty of ice were available at all times it would be a different matter, but many of our population have neither money to spend for ice, nor a proper place to keep it if they could get it.

Under these circumstances, milk even if delivered in a fairly sterile condition does not long remain so. The question of preservatives, diluents and such matters does not concern us at this time, though the reports of the milk inspectors frequently show that some dealers will resort to questionable methods, when it comes to the disposing of their supplies. We must also consider the variable supply of milk both from the quality and the quantity standpoints. Various circumstances may interfere with the quality of the milk. A long dry season, while the cows are grazing, will interfere with the amount of grass in the pasture. A blizzard in the winter may interfere with traffic and prevent the shipment of the milk for one or more days.

Another question is the preparation of fluid milk for infant feeding. So much care has to be exercised in the preparation of a modified formula and its preservation after preparation, that the average mother or nurse has neither the time nor the knowledge to prepare them properly.

As a result the finished product varies greatly at different times, and the baby does not thrive as it should. The preparation used receives the censure, and an other one is experimented with for a change. Usually the results are about the same. What else is to be considered, and what other methods to be employed?

Allow me to call attention to a whole milk product which is now receiving much favorabe consideration by the medical profession in view of both clinical and biological findings. I refer to sweetened condensed milk—the best grade. This product is made from whole fresh cow's milk in such manner as to preserve all of the nutritive qualities of the milk, and when properly prepared and fed comes as near to meeting

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Cancer From a Common-Sense Aspect

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This paper consecutively follows a series of previous papers by the same author which have appeared exclusively in the MEDICAL TIMES. They have created wide-spread interest. With reasonable demand, copies of preceding articles may be procured from the publisher, awaiting reprint of the series in more comprehensive form.

Life lives upon life. We feed upon living things—animal and vegetable. We do not subsist upon minerals except as they are organically incident to that life we eat.

In malignancy we are confronted with an exact simile. In cancer manifestation we have present a perfect replica of "life living upon life."

As in tropical and even temperate vegetable existence, strong and sturdy examples of vegetable life die under the encroachment of parasitic plant attachment; so humanity under weakened resistance yields to the parasitic force of a similar invading presence.

Cancer is a typical example of lower form animal existence successfully preying upon superior animal life through the gateway of weakened existence.

Reduced to homely language, the presence of cancer in the human entity is paralleled among nations by the presence of non-productive races who eat upon the substance of those who give them hostage. With such alien—and parasitic—guests, relief comes only through suppression: cure by obliteration.*

* Russian pogroms and Turkish massacre of Armenians.

The obliteration of cancer, similarly depends upon the introduction of some means whereby the alien presence may be destroyed, or disarmed of its encroachment power.

Contemplating the structure of cancer creation from both gross and microscopic aspect, we easily discover a looseness of workmanship which indicates "hurry." There is lacking the skilled workmanship (though the same materials be at hand) which characterizes normal body building.

We have the picture of a hastily constructed shelter provided for an emergency, rather than the fineness of histologic architecture which constitutes permanency.

Absence of nerve fiber (the facility which provides telephonic communication, as well as lighting and sundry other features that are a part of well ordered construction) is noticeable; as well as absence of proper plumbing. The loose character of that latter feature is only too well displayed in the faultily channeled arterial flow and its lymphatic concomitant.

With barbarian mind I venture the thought that the long stasis in cancer research leading to cure has been because so much has been left to pathologists. The pathologist lives in a realm of cells and bacteria. He is generally an outlander as concerns study of the aspects of disease in grosser form.

With refinement of vision there always comes refinement of thought. A provincialism of mental range is consequent. To use a pet phrase of one of our very few most skilled experts in pathology, observers sometimes "cannot see the woods because of the trees."

The reasoning of the average pathologist is deductive. Living amid cell life visualizations, he establishes premise only from what he sees and reasons from that fixed point. He overlooks in his studies of malignancy that his cell subjects—of diversified forms and varied arrangement—are merely examples of Nature's effort with her own material to combat some existing factor which we call disease. He ruminates—"this type of cell I see here, always or generally goes with this; and this other type always or generally goes with that"—and making an easy syllogism he pursues with few to question to an ultimate fiat that a rather thoughtless profession accepts as authority.

Acceptance of such dictum shuts the door to medical progress, as better men than I have observed. The pathologist is a vital accessory to medical practice but he is but one cog in an intricate piece of research machinery which includes more cogs than himself.

Take sections of carcinoma of the liver, propagated under transplantation into living culture media, and submit them to most skilled pathologic authority; and you are apt to get general report that the specimen submitted is normal liver tissue.

Submit typical examples of long bone giant celled sarcomatous growth to expert pathologists and you will get report of benignancy; while submitting similar specimen after surgical recurrence, one often will get report of malignancy. America's most eminent authorities will concur in those statements, for they emanante from them.

This pronouncement is not made to damn the pathologist but to curb a growing arrogance of primogeniture in knowledge, equally applicable to pathologist, surgeon or physician, when either asserts too much.

When pathologists in general can convince themselves that the cells studied are resultant of body process in effort to heal instead of being actual criminal entities, a new point of perspective will be achieved which may lead toward a path of greater helpfulness to humanity.

In a previous paper I have likened the exciting cause of malignancy (Trichomonas) to surface pedicular presences. Crude as the simile may be it is none the less correct, as applied medication is rapidly proving.

Cancer, caused by a microscopic, internal, globulin-feeding, parasitic presence shouldn't be a bit different in its terrifying aspects than a surface invader of more macroscopic size. That cancer has inculcated us with certain terror is wholly because our sluggish mental activities follow that psychic ratio which decrees that 95% of man's acts and thoughts are the hark-back of accumulated generations (instinct) and only a scant 5% are due to original initiative (reason). This is so evident in the annals of medicine as to be beyond discussion except by dim-minded votaries whose very arguments must prove the contention.

* * *

Just as life lives upon life we find that Nature having her poisons, with the same lavish hand, provides her antidotes. Quinin in malaria, mercury and arsenic with spirochetae, chaulmoogra oil with leprosy, illustrate common-sense couplets.

So the cannibalism of existence gets us down to the old proposition of the survival of the fittest, with only a possible 5% of that part of man's intellect which may isolatedly interest itself in the subject, to play the fireman act and make rescue from a human conflagration.

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Medico-Legal Reflections of a Psychiatrist*

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A cursory survey of the nomenclature or classification of mental diseases put forward by writers on psychiatry discloses an almost endless variety of forms of mental disorders. In fact, it would seem as though substantially every writer on the subject deemed it incumbent upon him to formulate a classification of his own, or to modify or amend that of some other writer. Needless to say, this has resulted in confusing the subject, not only to the lay mind, but to the average medical mind, as well, which too often passes it up as something that is incomprehensible and beyond its ken. The unfortunate effect of this psychopathic jumble upon the question of expert testimony is too obvious to call for more than a passing mention here.

That no human institution is perfect, is a truism which is especially applicable to the institution known as expert testimony or opinion evidence.

In any consideration of the subject of medical expert testimony in criminal trials, one is immediately confronted with the great difficulty of finding a working formula or panacea, so to speak, for the correction or cure of evils and abuses arising in connection with such trials, which evils and abuses have been accentuated by the scandalous misuse of expert testimony in a murder trial, which, in its various ramifications has been a stench in the public nostrils for more than fifteen years, the last chapter in which has only recently been exploited in a farcical trial in a neighboring city. The unscrupulous tactics resorted to by the defense in that trial and in the several subsequent habeas corpus proceedings, afford a striking example of the misuse of medical expert testimony which, in the writer's opinion, has done more to bring such testimony into disrepute than aught else in the entire annals of medical jurisprudence.

There seems to be a great deal of misapprehension in the public mind, as well as in that of the general medical profession, respecting the subject of medical expert testimony, and especially in regard to the attitude and conduct of those members of the profession who are called upon from time to time to give such testimony, particularly in cases where mental conditions are in issue. It appears to have become the custom of late to denounce medical experts, both in the medical and secular press, as well as by lawyers, judges and some doctors, as unscrupulous and dishonest, and as lending themselves to one side or the other for pecuniary considerations, thus making no distinction between true and false experts, and condemning all alike.

In the medical profession there are experts and experts; many of whom are well qualified and conscientious, while certain others are apparently willing to lend themselves to the support of whichever side they are called, regardless of the facts in the case. Certain of these so-called experts are without special qualifications and experience in mental diseases—"hot house alienists" who spring up in a night, so to speak. On the other hand, the writer believes that a great majority of experts who appear in medico-legal cases are conscientious and honest, and are unwilling to lend themselves to the aid of the side in which they are called, unless the facts warrant them in doing so. The point seems to be overlooked that expert testimony is quite different from that of the testimony of lay witnesses who are called to testify only to facts, such witnesses not being permitted, under the rules of evidence, to express opinions except as to whether the acts and declarations of a defendant which they have observed, and to which they have testified, impressed them at the time as being rational or irrational, while the medical expert is allowed, under the rules of evidence, a much wider latitude and may express his opinion, based on the evidence submitted to him, as to the mental condition of a defendant. If the medical profession, in stead of condemning medical experts, would fix a standard of qualifications based on special study and experience in a particular branch of medicine, which shall entitle a member to rank as an expert in that branch, and at the same time put its seal of disapproval and condemnation on the practice which now too frequently obtains of physicians posing as experts upon subjects respecting which they have no special knowledge or experience—so-called "pan experts"—it would at least do much toward curing existing abuses in respect to the present methods of presenting medical expert testimony.

None of the schemes which have been put forward from time to time, such as the appointment of commissions by the courts, by governors, or by medical societies, are feasible. In fact, able judges have repeatedly declared that all these schemes are more or less visionary and impracticable, for the reason that under the rules of evidence a defendant may submit any testimony that tends to help his defense, so that if experts appointed by courts report on investigation that a defendant is not insane, the latter still has the legal right to raise the plea of insanity on his trial and call experts to testify to the same. In the State of New York a law was passed in 1874 providing in substance that, where a defendant entered a plea of insanity, the court should thereupon appoint a commission to determine his mental condition, and that the findings of that commission should be final; and if the commission reported to the court that the defendant was sane, the issue of his mental condition should not be raised again on the trial. Under the provision of that act, the courts, in a number of cases, appointed commissioners to inquire into the mental condition of the defendant, and in every instance where such commission found the defendant to be sane, the plea of insanity was raised again on the trial—as though no commission had existed—and in defiance of the statute referred to.

Curiously, the existence of mental disease is something which lay persons seem to regard themselves as perfectly competent to determine, even in most obscure and difficult cases, and they freely express opinions on the subject; whereas the same individuals would not think of making a diagnosis in obscure and difficult forms of non-mental disease, but would

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be quite willing to leave the diagnosis in such cases to the physicians.

That existing methods of presenting medical expert testimony in the trial of criminal causes is not only imperfect, but is attended with serious evils which tend to bring the medical profession into disfavor with the public, with the bar and with the courts, there can be no question. Such being the case, it logically follows that there is need of reform in this matter, and the question at once arises, how can that reform best be brought about? The method, which as true physicians we would naturally adopt in a case of this kind, would be to seek out the cause of the malady and then to endeavor to secure its removal by appropriate treatment. In looking for the causes of the evil complained of, we shall not have far to seek. They will readily be found, first, in the usage of courts which permits of the selection of experts by counsel on either side, without regard to their qualifications or standing, frequently the only requirement being that the expert so selected is willing to give an opinion in favor of that side, and, second, in the absence of any standard of qualification, fixed by the medical profession, as regards special study and experience in a given branch of medical science, which would, at least theoretically, render the would-be witness sufficiently skilled in that branch or subject to justly constitute him an expert.

The first mentioned evil could doubtless be corrected by statutory provision, not for the appointment of a "Board of Official Experts," but for the selection of experts by the court in each case; and while it might occasionally happen that a judge in selecting an expert or experts would be influenced by other than meritorious motives,—a number of such instances having come to the writer's notice, as a rule the courts could be relied upon to appreciate the responsibility attaching to their action in the matter, and to endeavor to select only men of skill and repute in that particular branch of medicine—men whose opinions would be respected by the bar, the jury, and the general public as well. Indeed, the very fact that the experts had been so selected would tend to give dignity to their position and weight to their opinions. The experts so selected, should be permitted to have free access to all the evidence in the case, also to examine the accused, and then to state their opinion, whether orally or in writing, subject to cross-examination, the cross-examination to be limited to the matters embraced in the opinion. Their compensation, also, should be fixed by the court, at a rate per diem, or by fee, which should be sufficient to induce qualified men to accept such service. Experts selected and paid by this method would be free from suspicion of being biased or influenced in their opinions by pecuniary considerations, while the character and standing of those who would be likely to be selected would tend to establish confidence in the correctness of their conclusions. The writer is well aware that lawyers would raise objection to this manner of selecting experts, on the ground that a defendant is constitutionally entitled to the selection of his own witnesses, and to call any witnesses whose testimony would tend to sustain his case — a right which can neither be taken from him or abridged. This objection, however, would be met by the fact that counsel would still be permitted to call experts in addition to those selected by the court; though it is safe to say that the opinion of the official or court experts would far out-weigh any differing opinion that might be offered by experts selected by counsel. It goes almost without saying, too, that this method of selecting experts would always be satisfactory to prosecuting attorneys.

Respecting the second source of evil, that is, the absence of any standard fixed by the medical profession by which the qualifications of a member to give expert testimony may be determined, the cure for that lies in the hands of the profession itself, namely, to fix a standard of qualifications based on special study and experience in a particular branch of medicine which shall entitle a member to rank as an expert in that branch, and at the same time putting its seal of disapproval and condemnation on the practice which now so frequently obtains of physicians posing as experts upon subjects respecting which they have no special knowledge or experience, relying upon their wit and the ignorance of counsel to save them from exposure.

As already intimated, the present method of presenting expert testimony is by no means perfect, but the writer believes it is far better and more practical than any of the visionary schemes which have been brought forward from time to time by medical societies, by bar associations, and even by certain alienists. Such, for instance, as the appointment of a "Board of Official Experts," by the courts, or by medical societies, or by the governor of the State, etc. In the writer's opinion it would be difficult, if not impossible, to devise any method that will supplant the present one, short of a change in our federal constitution. This opinion is sustained by many if not most of the judges, also by many leaders of the bar, who hold that a defendant on trial has a constitutional right to present any proper evidence that might aid him in his defense.

In a very able and instructive paper on the subject of medical expert evidence, Willard Bartlett, formerly Associate Justice of the New York Court of Appeals, says:

"In considering the various projects which have been put forward for improving the administration of justice, so far as expert evidence is concerned, it must be borne in mind that no matter what provision is made for the appointment of official experts, the litigants in an action at law cannot be prevented from availing themselves of the testimony of other expert witnesses. To prevent that, and restrict parties solely to the evidence of official experts, constitutional amendments would be necessary, involving changes so sweeping as to be antagonistic to the spirit which now pervades our judicial institutions. And, if such changes in the fundamental law were possible, is it at all certain that they would be desirable? I believe that justice in the United States is generally well and honestly administered; but such a thing is conceivable as that a judge might unwittingly appoint incompetent official experts who were anything but representative of the best element in the medical profession. * * * * I should be sorry to have to be treated by the physicians of several able judges whom I have known in past years, and yet I am certain that in each case, his physician would have been the first either of these judges would select for any official or medico-legal preferment within his power to bestow."

It would doubtless simplify matters, were it feasible to do so, to provide that questions of expert opinion should be passed upon by the court, instead of, as is now the case, by a jury of laymen, who are not supposed to be familiar with the intricacies of psychiatry. This practice, unfortunately, is one that cannot be abolished, for the reason that the terms of our federal constitution confer upon every citizen when charged with crime the sovereign right of trial by a jury of his peers—a right which under existing law is eminently just and proper.

Regarding the propositions to provide for the appointment of a "Board of Official Experts," whether by the governor of the State, by the courts, or by a State commission in lunacy, it is the writer's opinion that none of these methods would be desirable or

acceptable, either to the medical or legal professions, or to the public, for the reason that it would savor of class legislation, which is against sound public policy. Furthermore, the prospective advantages through professional prominence and pecuniary gain, whether in fees or in salary, which such appointment would offer, might lead incompetent and unworthy members of the profession to seek appointment thereon through partisan or other questionable influences. Moreover, such a board, even if fairly representative in its make-up, would be a ready target for unfriendly or hostile criticism by their less fortunate brethren in the same line of practice who might, whether justly or unjustly, regard themselves as being discriminated against. Then, too, it would require a very large board, or several boards, to provide a sufficient number of experts in the various branches of medicine, surgery and chemistry in which medico-legal questions arise. Says Mr. Justice Bartlett in the paper referred to:

"There is not likely to be any radical change in the matter of legal procedure like this, without the approval of the bar, and I doubt very much whether the bar would approve any legislation which would enable the courts or any other appointing power to create a privileged class of expert witnesses.

In his presidential address delivered at the annual meeting of the Ohio State Bar Association, in 1922, Mr. C. E. McBride, under the caption, "Selecting Expert Witnesses," indulges in a wholesale and, as it seems to the writer, unwarranted condemnation of medical expert testimony. President McBride declares, among other things, that the trial court should be clothed with power to determine the need of experts in every case, as well as the qualifications of such experts—"this absolutely and without review." He further says, "The slightest reflection ought to convince anyone that litigants should have no choice in the selection of expert witnesses, but should bow to the authority of the court in the determination of the necessity for calling them, as also in their selection," and, again: "There is a growing sentiment in favor of the employment of expert witnesses by the court, as is observed in Rogers, on Law of expert testimony; Lawson, Law on Expert and Opinion Evidence; Foster on Expert Testimony, and other writers along the same lines." President McBride then quotes approvingly the following from "a New York Surrogate":

"The present system of presenting the testimony of experts is poorly calculated to assist in arriving at the truth, as the witness has invariably given assurance" (sic) "that he will swear to an opinion favorable to the party calling him, and for this he usually receives a fee proportionately to his estimate of the value of the opinion to the side for which he testifies."

He then quotes Judge Peckham of New York, as saying:

"Expert opinion has been used so much that it is viewed with great suspicion by both courts and juries; and it has become very plain that where opinion evidence is admissible it is open to any attorney to procure the opinion evidence desired by paying the market price thereof."

This remarkable declaration of Judge Peckham's clearly implies a belief on his part that corrupt bargaining is commonly, or at least frequently, practiced by both doctors and lawyers.

In view of the sensational nature of these charges, the writer ventures to suggest that they be brought to the attention of the Teapot Dome "muckrakers" of the United State Senate for investigation. Respecting the flippant assertions so frequently made that medical experts can be purchased without difficulty to swear to anything, the writer maintains that this statement is not true and that nothing can be truthfully said against the honesty of purpose of most medical men who go upon the witness stand.

Fortunately, such condemnation of expert testimony is by no means universal. A quite recent decision of the Supreme Court of Wisconsin, in reversing a judgment of the trial court, said the latter

"evidently disregarded the expert testimony * * * * However, there is a class of expert testimony that is competent, worthy of consideration, and that cannot be ignored by the trial court or jury, and that is the evidence of those persons who by reason of special study and experience possess knowledge and judgment not possessed by mankind in general. When expert testimony is properly presented it must be weighed and considered the same as other testimony." (In re Butts Estate, (Wis. 193) N. W. R. 988).

Anent this subject Mr. Justice Bartlett says:

"There is nothing to prevent a physician who is asked to see a case with reference to giving testimony as an expert from exacting an agreement that his remuneration shall in no wise depend upon the opinion which he may form upon making the desired examination; or, in other words, that he shall be paid just the same and just as much whether his conclusion is agreeable or disagreeable to the attorney who seeks his servies. No attorney will refuse to consent to this course unless he is desirous of influencing the doctor to take one view of the case rather than another, because in that event he will get paid, while otherwise he may get nothing. A tempter of this sort should be shut out of the doctor's office with no gentle slam of the door. And so in many other ways which might be suggested some of the most serious evils of medical expert evidence may be effectively dealt with by 'reform within the party.'"

There is another point in connection with this subject which, in the writer's opinion, should receive the serious attention of both the legal and medical professions, for the reason that it is frequently a source of discredit to both. This refers to the unprofessional practice of certain medical men—mostly pseudo-experts—acting as medical advisor to counsel and as expert witness in the same case. To observe, as the writer has often done, a doctor sitting in Court at the elbow of counsel, actively engaged in taking notes and preparing or suggesting questions for the latter to put to the witness, also framing questions for the cross-examination of a fellow practitioner and otherwise openly assisting counsel in his efforts to break down the opposing side, and subsequently taking the witness stand for that purpose, is, to say the least, deplorable. If a physician is to appear as an expert witness, he should keep away from counsel while in court and take no part in the conduct of the case which would put him in the attitude of assistant counsel or of a biased or interested party. In the first trial of Thaw, the writer was selected by District Attorney Jerome to assist him in the preparation of the medical branch of the trial, a service which he accepted with the distinct understanding that he would not appear as a witness in the case.

The late Chief Justice Cullen, in a discussion of this subject before the Kings County Medical Society said, in substance: The medical expert should not be prevented from appearing in court as a witness, nor from appearing as counsel, but should be restrained from appearing in both capacities. But a physician who is to be a witness may properly advise counsel beforehand, out of court, either as to his testimony or as to medical questions involved in the case.

Anent this subject Mr. Justice Bartlett says:

"It is entirely possible for the doctors of this state or country to so frown upon the practice of acting as medical counsel and medical witness in the same case as to stamp it out completely."

Respecting the sweeping condemnation of medical expert testimony in which the courts, the public press, and to some extent the medical press, are wont to indulge, some even going so far as to dcelare that all expert witnesses lie in proportion to the size of their fee, Mr. Justice Bartlett, referring to the common assumption by lawyers and doctors that courts

and juries would be sure to get at the truth if the expert witnesses on one side could only be induced to agree with the expert witnesses on the other, cites a case in point which occurred in California, in which the plaintiff, a married woman, was injured in an accident upon the defendant's railroad. In the suit which she brought against the railroad company to recover damages, one of the principal questions was the extent of the injuries she had sustained. She had been examined by three or four medical men in her own behalf and by three or four other medical men in behalf of the defendant. Both those who testified for the plaintiff and those who testified for the defendant agreed that the plaintiff was suffering from a uterine or ovarian tumor, but there was a difference of opinion as to whether the tumor could have been produced by the plaintiff's fall. A verdict of $20,000 was rendered against the railroad company. Ten days after the trial the plaintiff gave birth to a child at full term although still-born, and it was admitted that there had been no tumor whatever! "Since the time of Mr. Pope," says the Supreme Court of California, "it has often been enquired 'who shall' decide when doctors disagree?'" This case shows that serious error may lurk in their conclusions, even when they have agreed. The possibility of so serious an error being committed by so many respectable members of the medical profession—for the court speaks favourably of their standing—tends to afford some justification for the popular distrust with which medical expert evidence is often regarded. Continuing, the learned justice says:

"In reference to this matter, however, I desire to express my dissent from the sweeping condemnation of medical experts in which the courts so often indulge. There is scarcely a case where expert evidence is taken, in which some of the experts are not perfectly honest. They do not deserve denunciation merely because other experts are dishonest, or because it is often difficult to tell the false from the true. The medical profession itself must help us to make the distinction between the two classes easier. However objectionable are some of the aspects of medial expert evidence, it cannot be dispensed with in the administration of justice. Let us remedy the evils, but, while we are endeavoring to do so, let us avoid that exaggerated denunciation which is calculated to convince the community that no surgeon or physician who takes the witness-stand as an expert is worthy of belief. Such teaching is a libel on the most unselfish profession in the world."

Mr. William Travers Jerome, in a public utterance, declared:

"No man has had more experience with experts than myself during the eight years I was district attorney, and during that time I recall only one man whose testimony was radically dishonest. Only one of these cases received great public attention, and that was on acount of the scandals connected therewith. These scandals were not, however, save with one exception, due to dishonest expert evidence, but to judicial incompetency. It does not follow because there are alienists who lie on the witness stand that all medical expert evidence should be abolished, any more than that because some lawyers coach witnesses to a point that amounts to subornation of perjury, the conduct of criminal cases should be left entirely to the judge. I have referred to the Thaw case, and you all know whom I mean, when I say that there was one man who testified on that occasion, who, in view of his testimony in that case, and in view of his evidence since and his own written report, would be expelled from the profession, if you gentlemen had the power to disbar him. Furthermore, I may say that in every case during my term of office the opinion of the experts retained by the State was justified by the subsequent clinical history."

Without attempting to make a classification of medical experts, it may be said that there are both false and true experts. For instance, there is the "pan expert," so-called, who has the temerity to appear as an expert witness in any branch of medicine or surgery. Then there is the egocentric expert who is possessed of the "ego complex" and who complacently takes his seat in the witness chair, gazes impressively about, with a smile of satisfaction irradiating from his countenance, and, in response to counsel, delivers himself in a pedantic and usually grandiloquent manner calculated to impress the court and jury with his profound and scientific knowledge as well as with his own importance. His testimony is usually couched in technical terms which are beyound the ken of the jury and possibly of the court. He also is prone to indulge in "a lecture" in answer to a question of counsel, thus creating a distinctly unfavorable impression.

Per contra, there is the true expert, who takes the witness stand without prejudice or bias and determined to be fair and just to both sides. He avoids the use of technical terms as far as possible, and if obliged to use one, he immediately explains it to the jury in simple language. In other words, he avoids talking over the heads of the jury; and on cross examination he never hesitates to admit a point, even though his answer appears to negative something he has said in his direct examination. Finally, he aims to present his testimony in a way that will leave no doubt in the minds of the court and jury as to his honest opinion in the case, regardless of what he may have to admit on cross examination. He never becomes ruffled or vexed under the naggings of a cross examiner. He also does not hesitate to decline to answer questions categorically, but insists on his right to qualify his answers. Moreover, he never gives evidence in support of a case that he does not believe to be right and true. Guided by this rule, expert testimony is far from the worthless thing some affect to regard it, an opinion in which the writer believes all true experts will concur, and, finally, it is needless to say that the testimony of such a witness usually receives respectful consideration by both court and jury.

In conclusion of this branch of his theme, the writer would say that the greatest compensation whcih has come to him in connection with his expert work, is the delightful contact and pleasant personal relations which he has been permitted to have with many distinguished members of the Bench and Bar, not alone in this State, but in other States and countries as well. This contact and these relations have engendered in him a profound respect for the legal profession as a whole; while any unpleasant experiences he may have had with individual members of that profession have been so exceptional and so trivial as to be practically negligible. Moreover, his observations of the working methods of lawyers in the trial of causes, both civil and criminal, during a period of nearly half a century, have had a broadening and uplifting influence upon him. In fact, early in his career as an expert witness, he was impressed by the broad, catholic spirit which usually actuates lawyers in the trial of causes, and especially by the spirit of tolerance which, as a rule, they display towards opposing counsel, and while in their zeal for the welfare of a client they may occasionally resort to unethical methods, or give way to anger, they seldom allow such things to disturb their friendly relations. They are merely "case mad," as they term it, and they rarely carry their ill feelings out of court. This, the writer regrets to say, is in striking contrast to the spirit of intolerance too often witnessed on the part of medical experts toward opposing medical experts who may chance to differ with them, and which, too often, results in life-long animosities. This phase of legal ethics furnishes a striking example to members of the medical profession who engage in expert work, and one which should en-

gender in them a like spirit of tolerance toward fellow experts who may chance to express opinions contrary to theirs, provided they believe them to be actuated by honest motives. Finally, in giving opinion evidence no expert need ever go against his conscience. In the writer's experience he can recall but one instance where he was asked by counsel, for a consideration, to testify contrary to the opinion he had formed. On the contrary, he has frequently been excused from testifying because he could not conscientiously do so for that side. In the District Attorney's office of New York County, and especially in the respective administrations of that office by DeLancey Nicoll and William Travers Jerome, the writer has had the honor of appearing in a large number of capital cases, in every one of which he was given an absolutely free hand in his efforts to determine the mental condition of the accused. In every case the conclusion reached was accepted by the District Attorney without question, and the case disposed of accordingly. The subsequent history of these cases confirmed the diagnosis in each.

The Hypothetic Question

Respecting the hypothetic question, it must be conceded that it is a very difficult proposition with which to deal, especially so far as relates to any improvement or proposed modification of existing rules of practice relative thereto. The rules of evidence provide for the hypothetic question, and the courts have held that while such questions must contain nothing that is not contained in the evidence they do not prohibit the omission of any facts in evidence which counsel may in their discretion see fit to omit. Hence, it frequently occurs that counsel omits from his hypothetic question certain important facts in evidence which, if incorporated therein, would tend to weaken or discredit his contention, and he is prone to include in his question only such facts in evidence as he thinks will tend to prove his case. Consequently, the hypothetic question frequently is a one-sided affair. The writer has frequently suggested, and sometimes insisted, that the question to be submitted to him should embrace a fair resumé of the whole evidence, and when this plan has been followed, he has usually found that he could answer the question thus constituted as consistently and to the same effect as he could have answered what might be termed an *ex parte* question. This, it seemed to the writer, has tended to strengthen his testimony in the estimation of the court and of the jury, and at the same time relieve him from appearing to be an unfair, one-sided and partial witness.

That the expert's opinion in answer to a hypothetic question should be based solely on that question and on nothing else, goes without saying.

The Supreme Court of Arkansas says:

"In a homicide case wherein one of the defenses was insanity, that medical experts, when duly qualified as such, are competent witnesses on the issue of insanity. Their opinions, expressed in answer to correct hypothetic questions embracing data which the evidence tends to prove, are relevant testimony. Hypothetic questions must contain all the undisputed facts essential to the issue. When there is a dispute about the existence of the facts stated in the hypothetic question, it is the exclusive province of the jury to determine whether such facts do exist. The truth or existence of such and every fact included in the hypothetic question is assumed. The opinions of the experts are built on this assumption, and if this foundation falls, the superstructure goes with it. Therefore, if the jury finds that any fact stated in the hypothetic question is untrue, does not exist, the jury must then disregard the opinion of the experts. But, on the other hand, if the jury finds that all the data stated in the hypothetic question are true, then the jury must consider the opinion of the experts in connection with all the other evidence in the case." Kelley v. State (Ark.), 226 S. W. R. 137.)

The Supreme Court of Oregon, in reversing a judgment for damages that was rendered in favor of the plaintiff, says:

"Objections were made to portions of the expert testimony. As an expert is not allowed to draw inferences or conclusions of fact from the evidence, his opinion should be exact on a hypothetic statement of fact. It is the privilege of counsel to assume any state of facts which there is any testimony tending to prove, and to have the opinion of the expert based on the facts assumed. But the testimony should tend to establish the facts embraced in the question. If the hypothetic question is clearly exaggerated and unwarranted by any testimony in the case, an objection to it should be sustained. The form of the hypothetic question, whether it states facts, or puts facts hypothetically, or refers to the testimony of witnesses as being true, should be shaped so as to give the witness no opportunity to decide on the evidence. Hypothetic questions are clearly improper if they directly seek the opinion of the witness on the merits of the case." (Lehman v. Knott (Ore.). 196 Pac. R. 476.)

Recently a prominent member of the New York Bar, in a discussion of the subject of expert testimony before a medical society, strongly advocated the abolition of the use of the hypothetic question entirely, apparently overlooking the fact, that the only way by which expert opinion respecting the mental condition of a deceased testator can be adduced is by means of a hypothetic question.

The Legal Versus the Scientific Definition of Insanity

The legal definition of insanity as a test of responsibility for criminal acts, that is, the so-called "knowledge of right and wrong test," presents a feature of the administration of the criminal law in which it is said the law has made little or no progress for more than half a century, or since the legal definition of insanity was formulated by the English judges in their decision in the celebrated McNaughten case in 1843. In fact, the criminal code of the State of New York today defines insanity in substantially the same language as that used by the judges in the McNaughten case, namely:

"A person is not excused from criminal liability as an idiot, imbecile, lunatic or insane person, except upon proof that, at the time of committing the alleged criminal act, he was laboring under such a defect of reason, as either (1) not to know the nature and quality of the act he was doing; or (2) not to know that the act was wrong."

As psyschiatrists we can hardly accept this "right and wrong" test as regards responsibility for crime. But as this is the law of the State of New York, and of many other States in the Union, we are obliged to abide by it. In fact, as experts, we have nothing to do with the law. Our function is simply to determine, if possible, the mental condition of the accused at the time the act was committed—a purely scientific question.

Every psychiatrist knows perfectly well that this so-called legal definition is unscientific and behind the age, and that in this matter the law has not kept pace with the progress of medical science. Those who are familiar with the phenomena of mental disease know perfectly well that in a large majority of cases in which the plea of insanity is offered as a defense to an indictment for crime, the accused knows the difference between right and wrong in the abstract—a large majority of the so-called "dangerous" or "criminal insane" being paranoiacs. We know that paranoiacs as a rule converse coherently and plausibly, and that they reason logically respecting their delusional ideas, but they always reason from wrong premises, the mental condition being one of gradually developed delusional ideas of the systematized variety, without marked mental deterioration or clouding of consciousness. So that, in most cases, with medical science the question is, not whether the individual knew the nature and quality of the act he was doing, and knew that it was wrong, but whether he had the power to control his acts and to resist the im-

pulse to do the wrong, or whether he was actuated by delusion which supplied the motive, impelling him to do the act.

If every form and stage of mental disease were invariably attended by a loss or suspension of the knowledge of right and wrong, such as usually occurs in extreme types of manic-depressive insanity, paresis, demnetia praecox, etc., forms or stages of disease which are usually characterized by mental aberration so marked as to bring them easily within the ken of unskilled observers who would readily recognize the symptoms which in themselves furnish presumptive evidence of a lack of power to distinguish rationally between right and wrong, no valid objection could be raised to the present legal test of insanity, wrong in principle though it be, for the reason that its practical effect, as applied to the class of cases referred to, would be to establish irresponsibility in substantially every case, regardless of the nature of the act committed. Unfortunately, however, but a small percentage of the insane who come within the jurisdiction of our criminal courts belong to the types of mental disease referred to, this class of persons being usually not homicidal, seldom commit, or attempt to commit, homicide. In other words, such persons do not belong to the "dangerous insane," consequently there is little or no difficulty in such cases in determining the question of responsibility, for the reason that they readily fall within the legal conception and definition of mental disease. It is the obscure and doubtful cases that so frequently puzzle our courts of criminal jurisdiction, and these are drawn almost wholly from the ranks of the paranoiacs; and this class, as we all know, frequently commit crimes from motives similar in character to those which actuate sane persons, namely, revenge, vindication of personal honor, defense of life or property, etc. But if we seek the basis of these motives we shall find that, unlike the motives of the sane, they are not founded on reality, but are the offspring of a diseased or disordered intellect, a psychopathic state which has deranged the psychic apparatus, so to speak, and left it awry, even though the logical apparatus remains intact. The paranoiac is prone to premise falsely and to morbidly misinterpret the conduct and motives of those about him. And while he may reason logically, he reasons from wrong premises, and in a way that a sane person would not do. Such being the case, it frequently happens that, under the requirements of our criminal code, medical men are put in the false position of testifying in effect that a defendant was legally sane when he committed the act, that is, that he knew the nature and quality of the act and knew it was wrong, when as a matter of fact they know that he was insane and irresponsible, according to the teachings of medical science.

The writer recalls a case in which a prominent physician in charge of a private institution for the insane was stabbed to death by a paranoiac who freely admitted that he knew it was wrong to kill a man, but said he had to do it in order to get his case before the court. He felt that he was persecuted by his relatives, by the police and by his physician whom he killed, but said he: "I knew if I killed this man I would be arraigned before the court, and, if so, I would be able to convince the latter that I was sane and rational, and that this persecution actually existed." He was subsequently committed to the writer's care at the criminal asylum at Auburn where he remained for many years, a confirmed and dangerous paranoiac until his death.

It has been suggested that the most satisfactory way to deal with criminal cases, especially capital ones, in which insanity is pleaded as a defense, would be to keep the question of insanity out of the case entirely during the trial, and to allow the jury to pass only on the question of the guilt or innocence of the accused irrespective of his mental condition; then, if the defendant is convicted, let the court appoint a commission of competent alienists to determine his mental condition. Such a commission could be relied upon to reach a sound and harmonious conclusion. The writer does not pretend to say that this method would be feasible, but it would at least seem to offer an improvement on the present method of determining the mental condition of a defendant which puts upon a jury of laymen, who presumably are not familiar with the phenomena of mental disease, a responsibility which they should not be called upon to assume. If the function of the jury were restricted to a finding on the facts, that is, if the defendant committed the act as charged, and sebsequently, the question of his mental condition were determined by competent psychiatrists appointed by the court, it is believed that the finding of such a commission would be accepted by the public, both lay and medical, and that there would be no danger of a miscarriage of justice. If this method were feasible under the constitution it would seem to furnish the best solution of expert testimony in criminal cases in which the mental condition of the accused is in issue.

"So long as mind and intention shall be held to constitute the foundation of legal responsibility," says Ordronaux, *"so long will their absence be likewise held to exonerate from all imputability of crime."

In other words, before there can be guilt, there must be mental competency to concoct it. And yet, despite this truism, there still exists, in both lay and medical circles, a wide diversity of opinion as to how far mental disease should be held to absolve from criminal responsibility. These diverse and even opposite views have existed from the time that Lord Hale undertook to define the exact extent to which the mental movements were influenced by insanity, and its consequent effect in impairing the responsibility of its victims, down to the present time. As a result of his investigations, Lord Hale concluded that while the milder forms of mental disease might not be sufficient to excuse one from responsibility for criminal acts, a sufferer from the severer types of the disease would be excusable for any crime he might commit under its influence. Subsequently, in 1843, the English judges, in response to questions put to them by the House of Lords, in connection with the celebrated McNaughten case, formulated a definition or test of insanity which was substantially the same as the one put forth by Lord Hale. In the language of the learned English judges:

"To establish a defense on the ground of insanity, it must be clearly proved that at the time of committing the act, the accused was laboring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing, or, if he did know it, that he did not know he was doing what was wrong."

From the time this judge-made law was promulgated down to the present day our criminal courts, with their traditional regard for precedent, have generally accepted it blindly and propounded it to juries in almost identical language, notwithstanding the emphatic protest of medical science that such test is in direct conflict with the teachings of such science and false in its ap-

* Judicial Problems Relating to the Disposal of Insane Criminals, by John Ordronaux, M.D., 1881.

(Continued on page 239)

Diagnosis and Treatment

The Necessity for the Intensive Treatment of Syphilis

H. Sheridan Baketel, of New York, describes the case of a salesman treated for lues in 1919 with eight weekly injections of neosalvarsan and intramuscular mercury. After this course the Wassermann was negative, as it was three months later. The doctor attending the patient told the man he was, so far as he could tell, cured. Nearly five years later the same patient visited the doctor's office, revealing marked signs of tabes.

The question arises, 'Who was to blame for this patient's condition?" The physician recommended the man to have occasional Wassermann tests made. The patient believing that a negative Wassermann meant that he was cured, saw no reason for having his blood examined again. As the result of insufficient treatment this patient was allowed to go on believing himself to be cured while the spirochetes were constantly at work. The result was that a man who with proper treatment could undoubtedly have been clinically and very likely serologically cleared up, is now suffering from tabes in advanced form.

When may a syphilitic patient be considered cured? It is difficult to answer the question. Possibly 50 years after treatment and then only if in the meantime the patient has revealed no clinical or serological symptoms and if, on autopsy, no pathologic lesions are revealed.

Dr. Baketel brings out the fact that the physician who asserts that a given case of syphilis is positively cured, not only imparts an assurance to his patient which may be unjustified, but he points to the economic question involved. Many of these patients who believe themselves rid of their luetic infection, eventually develop syphilis of the central nervous system and become wards of the city or State. Taxpayers thus have an added and needless burden imposed upon them.

The writer is of the opinion that much distress can be obviated and the paresis and tabes minimized if the physician who treats the patient for his syphilis will give a sufficient amount of initial treatment. The author is in the habit of giving from 20 to 24 injections of salvarsan or neosalvarsan with much more intramuscular mercury, bichloridol, during the first year of treatment and after that he keeps the patient constantly under observation with frequent Wassermanns. He quotes many of the leading syphilologists who have written him their plan of treatment.

John A. Fordyce and Isadore Rosen of the College of Physicians and Surgeons, New York, treat positive dark-field and negative Wassermann cases with eight intravenous injections of salvarsan, 0.3 to 0.5 gm., the first three every other day and the remaining five every five to seven days. The second course of six injections is given after an interval of 4 to 6 weeks. If the Wassermann remains negative patients are considered aborted cases. If the positive Wassermann develops, patients are given three arsenic injections every other day of 0.3, 0.5 and 0.6 gram and the remainder every 5 to 7 days until eight have been given. They also give during this course 15 intramuscular injections of salicidol, grs. 1 to 1½, every 7 days, or bichloridol, grs. 1, every 4 to 5 days. Notwithstanding a possible negative result, the patient after a 4 to 6 weeks' rest, is given 8 weekly injections of salvarsan and 15 mercurials. If necessary, a third similar course is given and cases are watched carefully for central nervous system involvements.

H. H. Hazen, of Washington, gives:

1. Eight injections of arsphenamin at 3-day intervals.
2. Injections of mercury for 3 months.
3. Six or eight injections of arsphenamin at 7-day intervals.
4. Injections of mercury for 3 months.
5. Rest period for six weeks.
6. Six injections of arsphenamin at weekly intervals.
7. Three months of mercury injections.

Perry Bromberg, of Nashville, Tenn., gives primary cases "from 10 to 12 doses of salvarsan at intervals of seven days, with intramuscular injections of mercury at five-day intervals. He employs from 16 to 24 doses. A period of rest for two months is followed by 8 injections of salvarsan and 12 of mercury, as outlined above. A period of three months' rest is followed by 6 injections of salvarsan and 12 of mercury. A four months' rest period, with 4 doses of salvarsan and 8 of mercury, will carry the patient well into the second year. Wassermanns are made at six months' intervals and further treatment is given as indicated by blood examinations."

Ballenger and Elder, of Atlanta, give patients showing chancres before three weeks, 12 to 15 doses of salvarsan supplemented with other antiluetic remedies. Patients with chancres after three weeks' duration and showing secondaries, receive 20 doses of salvarsan supplemented with other antiluetic remedies. They give other arsenicals at intervals of from three to six days.

Charles Chassaignac, of New Orleans, gives as intensive treatment as safety will permit, administering arsphenamin first and continuing it for several months, then giving mercury by more than one method and later the iodides alternating with mercury. He says the minimum duration of treatment should be two years.

Walter J. Highman, of New York, treats early syphilis by giving two series annually during the first two years of from 6 to 10 arsphenamin and 10 to 15 mercury salicylate, followed by two short series annually of the same description for two years more, even though the Wassermann test may have proved negative at the outside and have stayed so.

Leon Herman and Baird Stuart, of Philadelphia, give 35 neosalvarsan and 108 mercury inunctions and 7 Wassermanns during the first two years of treatment. They push maximum doses if the patient's condition is satisfactory.

Herman L. Kretschmer, of Chicago, gives 10 neosalvarsans and 10 mercury salicylates once a week each during the first 10 weeks, then mixed treatment for four weeks, then rest four weeks and a Wassermann. Irrespective of the latter this course is repeated. If the Wassermann is positive they are given a third course; if negative they are given 1 or 2 courses of salicylate of mercury, 10 injections each, and at the end of that period 5 more injections neosalvarsan, making a total of 25 injections.

Joseph E. Moore, of Baltimore, makes the treatment of seronegative primary syphilis last exactly one year and it consists of 26 doses of arsphenamin and 26 weeks of mercury. In seropositive primary and secondary syphilis he gives five courses of arsphenamin and 32 weeks of mercury. He believes that by properly treating every case of primary and secondary syphilis the present level of 20 to 25 per cent neurosyphilis may be reduced to 5 per cent or less.

Granville MacGowan, of Los Angeles, insists that his patients take at least 20 injections of an arsenic preparation the first year. He administers it every fourth day in amounts varying from 0.2 to 0.6, using 0.45 commonly. After this he gives a course of 12 intramuscular salicylates at weekly intervals. In secondaries he gives 20 intravenous neosalvarsan, followed by 12 intramuscular salicylates, then a rest of 2 months, another course of 15 injections of neosalvarsan, followed by the usual amount of salicylate, then a four months' rest with a repetition of the neosalvarsan and mercury. He is not dependent upon Wassermanns, but treats his patients for at least two years.

Nathaniel P. Rathbun, of Brooklyn, gives 8 doses of neosalvarsan at weekly intervals, followed by 20 intramuscular salicylates from ½ gr. to 2 grs. After a month's rest this course is repeated.

S. E. Sweitzer, of Minneapolis, gives 4 neosalvarsan, one a week, and then hg. sal. twice a week for 6 weeks, then a week's rest followed by 4 neosalvarsans and 12 hg. sal. After 2 weeks' rest come 4 neosalvarsans and a short rest, then 12 hg. sal. again. The second year he gives 4 neosalvarsans and 3 courses of hg. sal. with rest periods between the courses of 6 weeks. The third year he utilizes 4 neosalvarsans and 3 courses of hg. sal., making the rest periods 8 weeks between the courses. The fourth and fifth years he gives 4 neosalvarsans and one course of hg. sal. He says as a result of his treatment he has never had a case of tabes or paresis develop in a patient treated in this way in 22 years.

Among the other physicians quoted who give intensive treatment are William T. Corlett of Cleveland, John R. Caulk of St. Louis, James B. Cross and Grover W. Wende of Buffalo, E. A. Fletcher of Milwaukee, H. J. Farbach of Louisville, Frank C. Knowles of Philadelphia, I. N. Kilburn of Springfiel, Mass., Edward L. Keyes of New York, A. B. Landrum of Columbus, O., Henry H. Morton and J. Sturdivant Read of Brooklyn, A. Nelken of New Orleans, Edward A. Oliver, Louis E. Schmidt and E. P. Zeisler of Chicago, L. T. Price of Richmond, Va., A. Ravogli of Cincinnati, Victor G. Vecki of San Francisco, Udo J. Wile of Ann Arbor, Mich., and Franklin R. Wright of Minneapolis.—(*Amer. Jour. Syph.*, Vol. VIII., No. 1, 1924.)

The Parathyroids

The Prescriber for May, 1924, gives an excellent review of the important work which has been done on the parathyroid glands. The phenomenon of tetany, which is produced by removal of these glands and is evidently connected with their function, has been the subject of considerable attention. Several hypotheses have been advanced, that which meets with most favor being the regulation by the parathyroids of the calcium metabolism.

Dragstedt, of Chicago (1922), observed that completely parathyroidectomized dogs could be kept alive, without symptoms of tetany, by diets containing large amounts of lactose. Parathyroid tetany he regards as due to an intoxication for which the proteolytic group of intestinal bacteria are responsible. The function of the parathyroid glands is to prevent intoxication by

these poisons. They do not furnish a hormone necessary for life, and dogs may be kept alive indefinitely after their removal provided treatment for prevention of this toxaemia is carried out. Dragstedt further reports that after a period of dietary control parathyroidectomized dogs may be placed on mixed diet without development of tetany; some other organ, probably the liver, seems to take over the function of the missing tissue. Such animals are, however, much more susceptible to untoward dietary influences than are normal subjects.

Luckhardt and Goldberg (1923) show that parathyroidectomized dogs can be kept alive and free from tetany by oral administration of calcium lactate in large doses. As time goes on the amount of calcium lactat may be reduced and finally stopped without appearance of tetany, but this is liable to recur at irregular intervals especially during the oestrous cycle. They think that the part played by calcium in this matter is complex.

Salvesen, of Christiania (1923), also found that dogs from which the parathyroids had been removed could be kept alive by administration of calcium salts, either intravenously as calcium chloride or orally as milk or as soluble salts. Removal of calcium from the milk by precipitation caused it to lose its effect. The animals were in a state of "latent tetany," and cessation of the calcium administration always resulted in tetany. During latent tetany the calcium of the blood is below, and the inorganic phosphoric acid, the normal. Appearance of tetany is always accompanied by a decrease, and its disappearance by an increase in the calcium content of the blood. During latent tetany, and more so during tetany, the tolerance for sugar is lowered, on account of a functional disturbance of the glycogen-forming organs. The lowering of the calcium content of the blood is due, Salvesen shows, to an increased excretion of calcium through the intestine, which excretion is prevented by the parathyroids. This excretion through the intestine makes it very difficult to keep parathyroidectomized animals alive by injection of calcium salts, and has led in the past to failure in experiments of this kind. Parathyroidectomy lowers the threshold of excretion of calcium by the intestines.

Vines (1923) shows that calcium loss in the body is a feature of many infective states; that the relation between calcium, tetany, and parathyroid function has been firmly established; and, further, that another disturbance of calcium metabolism is to be found in a change in the form in which calcium circulates in the blood stream. In the healthy individual the entire calcium of the serum (after coagulation) should be in the "active" state, *i.e.*, it should be precipitated by its chemical equivalent of ammonium oxalate. In normal circulating blood about 60 per cent. of the calcium is active or ionic and available for tissue nutrition, and 40 per cent. is bound to a lipoid complex and is required for coagulation. When clotting occurs this "bound" calcium is split off into the ionic state in the serum. In certain diseases, however, the amount of bound calcium is much more than 40 per cent., and therefore less is available for direct tissue nutrition,—sometimes as little as 25 per cent. Injections of calcium chloride help to increase the ionic calcium, but a more satisfactory method is to administer parathyroid substance, which at once regulates the calcium metabolism. This is particularly noticeable in ulcerative conditions, which rapidly improve under parathyroid therapy.

Parathyroid Transplantation.—Parathyroid grafting has been tried by Hohlbaum with some success in a case of idiopathic tetany. A nurse, aged 22, was troubled with frequently recurring paroxysms. Two parathyroid bodies (histologically proved to be such) from a woman who had just died were transplanted into her peritoneal wall. Some hours after the operation a slight spasm occurred, then for two months no attacks were observed. At a time of writing a faint Chvostek symptom could be elicited.

Madlener tried transplantation as a remedy for paralysis agitans, a disease ascribed by some to the parathyroids. The gland of a woman subjected to operation for goitre was grafted in the abdominal muscle of a patient suffering from well developed paralysis agitans. For a few weeks improvement was observed, but after six weeks the condition was as bad as ever.

Bergman treated two cases of paralysis agitans and four cases of Parkinsonism following epidemic encephalitis with parathyroid grafts from calves. Only in one case did definite improvement follow. The author concludes that the parathyroids are not aetiologically connected with these diseases.

Parathyroid Surgery and Tetany.—Dunhill deals with the parathyroids in relation to surgery. He remarks that in a certain small number of thyroid operations symptoms occur in which tetany is one of the manifestations, and he concludes that such symptoms are due to inadvertent damage to the parathyroids, either by removal or by cutting off the blood supply with a ligature. He describes a technique designed to avoid these dangers. Should tetany occur, three methods have been recommended for its treatment: (1) injection of calcium lactate, 4 grains of which proved effective in each of the author's two cases; (2) parathyroid grafting, which has given good results with others; (3) parathyroid therapy, about which the author professes himself to be sceptical.

Parathyroids and Pancreas.—A relation between the parathyroids and the pancreas has recently been suggested, and evidence for its existence has been submitted by several workers. Artom is of opinion that a definite relation exists between the internal secretion of the parathyroids and the external secretion of the intestine, total or partial insufficiency of the parathyroids being accompanied by marked changes in enteric secretion.

Winter and Smith, having found previously that adrenalin and thyroid had an effect on the blood sugar of rabbits tried the effect of parathyroid injections. In normal animals no effect was observed, but in animals suffering from hypoglycæmic convulsions due to insulin there was a very marked effect. The animals quickly became rigid and died in a few minutes. Parathyroid thus appears to intensify the action of insulin, only one-fourth the usual dose of insulin producing hypoglycæmic convulsions if given simultaneously with parathyroid.

Forrest applied these results to the human subject in five cases, and found that parathyroid was almost, if not quite, as efficacious if given by mouth. Insulin was given by injection and parathyroid (1/10 grain tablets) by mouth at the same time. Parathyroid alone has no action on the blood sugar, but in conjunction with insulin the effect appears to be very marked. Since this communication, however, Forrest appears to have modified his views. In a letter to the editor of the *Endocrine Survey*, Mar., 1924, he says:—

"Recent work on the parathyroid-insulin combination has not been satisfactory. The combination appears to be quite useless, except when given to a starving patient. With only small amounts of carbohydrate no drop has been observed, and conversely, with enormous doses of parathyroid no definite toxic symptoms occurred. My results have been indifferently confirmed by other observers, except as to the gross inefficacy with any carbohydrate. Nobody has, up to the present, obtained any positive results whatever. As I set out with the object of reducing the dosage of insulin, my results must be considered as possibly due to other causes than parathyroid, and hence null and void, unless authoritative and general confirmation is forthcoming."

The matter is thus left in doubt until further research throws more light upon it.

Parathyroid Therapy.—In an article on parathyroid therapy Vines reviews recent developments and shows the relation of the parathyroids to calcium metabolism and to the endocrine balance. The immediate response to infection, he says, is an overaction of the sympathetic system. If the invading organism is not rapidly destroyed, the sympathetic irritation is continued and recovery is delayed, the condition becoming chronic. But if the activity of the parasympathetic can be stimulated, the re-establishment of the normal balance between the two systems permits recovery. Parathyroid therapy is a means of re-establishing the normal endocrine balance of the body which infection has disturbed. Emphasis is laid on the necessity for restoration of the balance between the sympathetic and the parasympathetic, adequate resistance to disease depending on the equilibrium between the two.

Vines describes a method of standardization of parathyroid preparations, based on the action of these bodies in preventing intoxication by guanidine and its derivatives. If an active parathyroid preparation is incubated at 37° C. with a known amount of guanidine in solution, the amount of guanidine reckoned as picrate at the end of the incubation period is found to be less than at the beginning of the test. Only one function of the gland is thus tested, but there is reason to believe that if the preparation is deficient in this function it will be deficient also in regard to its influence on the calcium metabolism. Details of technique are given, the process being applicable to the testing of whole gland, desiccated powder, or tablets.

Sprue is a disease which has recently proved amenable to parathyroid therapy. Scott, of Hong-Kong, who was himself a sufferer from sprue, was led to study his own case, and found that the blood was low in calcium, the deficiency being in the ionic form. He concludes that sprue is originally a dietetic trouble. Excess of proteins stimulates over-production of acid in the gastric secretion, leading to habitual overacidity. Entrance of acid into the duodenum stimulates the production of secretine, which in turn leads to over-stimulation of the pancreas, and secondly to disturbance of the endocrine balance, particularly the parathyroids and salivary glands. All acute and chronic toxemias react in some degree on the parathyroids, causing disturbance of calcium metabolism and consequent decrease in tissue resistance, a vicious circle being thus set up. Scott cured himself with parathyroid, 1/20 grain twice daily.

(Continued on uage 240)

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A Logician Organizes a Hospital

Henry Ford founded his hospital in Detroit on the theory of supplying "the best medical attention at the lowest rate consistent with the service rendered." The fees charged for surgical work at this hospital are far below those customarily levied. One pays from $25 to $150, the richness or poverty of the patient having nothing to do with the fee asked. Ford reasoned that there was no sense in charging a man $8,000 for a Packard car because he had some money, or another man $5,000 because he hadn't so much, or still another man $3,000 because of relative poverty. He thought that a pound of steak or a dozen eggs should cost him just as much and no more as it cost his cook, and that a glass of milk and a piece of pie should have one price. So he concluded that hospital costs should be brought under the same principle.

According to all the laws of logic there is not a thing the matter with this type of reasoning. But the world has little use for logic. Up to a certain point people who have been brought very strongly under some directing influence emanating from the logicians will behave quite well. Thus when the wife of Henry Ford, herself one of the four members of the Board of Trustees of the hospital (the others being Henry himself, his son Edsel, and Edsel's wife), required an operation, logic won, and she entered the hospital as a patient. But when a child of Edsel Ford required an operation on his auditory apparatus, a kind of panic ensued, the faculty and staff of the Ford Hospital were not good enough to do the work, and Ann Arbor and Chicago were wired for surgeons. Moreover, the patient was kept in the Ford home and the operation was performed there.

Mr. Ford's earnest, logical, conscious mind worked out the ideas upon which the hospital was founded, and it is good enough for anybody that will use it. But in his subconscious mind Henry knows that it is really not what he wants for his stricken grandchildren.

What do you suppose Ford paid those Ann Arbor and Chicago men? Something between $25 and $150? Oh, boy!

Don't you think Henry is better satisfied, no matter what the outcome, than if he had employed the surgeons of his hospital?

Of course there is no logic about his late conduct. Why should there be logic about the conduct of any other American with sick grandchildren?

It is said that a number of millionaires have availed themselves of the services and fees of this precious hospital. We don't doubt it for a moment. But the grandchildren of those millionnaires will never crowd the institution.

This hospital was designed to solve the sickness problem of the middle class who are neither rich nor poor. God help them!

Henry Ford is the in-deadly-earnest type of Irishman. His logic is all right when applied to flivvers, but not when applied to a dear little one with a mastoiditis and sinus thrombosis. He himself weakens when the test comes, proving that he is human.

That hospital is a monument to logic. Without the Ford millions behind it logic itself would scrap it.

Henry has no business applying his logic to hospitals, wars, and racial and religious questions. He then becomes a bore and more or less of a nuisance. In the case of the hospital he has defrauded himself but rendered a service to the public by advertising what he really thinks of the place.

A Stupid Policy

In the *Journal of the American Medical Association* of July 12, under the caption Queries and Minor Notes (page 140), there appeared the following items:

WALTERHOFER TREATMENT OF PERNICIOUS ANEMIA

To the Editor:—Recently the widow of a former patient came in greatly perturbed, because she believed that apparently all had not been done to save her husband, who had died of Addisonian (pernicious) anemia. The enclosed newspaper clipping was the cause of her added grief. She believed that (in addition to the six whole blood transfusions) this procedure of "washing out the bone marrow" should have been done. Because of this incident, I believe that many more relatives of persons who died of addisonian anemia are heart-broken after reading such an article. Can you give me any information regarding this "Professor Walterhöfer," the "distinguished German surgeon," mentioned in the clipping? I am particularly interested in Addison's anemia and am desirous of learning about new therapeutic measures, but have not found this method in any recent literature.
RALPH A. KORDENAT, M.D., Chicago.

ANSWER.—The clipping referred to was a newspaper article by Dr. I. L. Nascher, whose sensational articles on medical topic appear regularly in Sunday papers, describing a method stated to have been devised by Professor Walterhöfer. Dr. Georg Walterhöfer has the title of extraordinary professor of internal medicine at the University of Berlin. The investigations were made at Goldscheider's and Bier's clinic. The operation consists in excochleation of the bone marrow of one or several long bones or in destruction of it by perfusion with a specially prepared salt solution. Walterhöfer and Schramm have published several papers. They publish only a few of the histories of their twenty-three patients, with diagrams of the red count and percentage of hemoglobin. Nothing is said about the morphologic findings in blood, and little about the patients' condition, so that the diagnosis is questionable in some cases.

Counting every patient who did not die almost immediately after the operation as a success, they claim remissions in 37 per cent. These remissions were, according to the authors, as good as one obtains with arsenic in beginning cases. Combination of the excochleation with other measures, such as arsenic treatment and blood transfusions, increased the percentage of remissions to 48 per cent. They claim that they tried the operation at first only in patients in whom all other methods had failed. It seems, however, that only arsenic was tried and that blood transfusions were used only in patients who had been operated on. The optimism of the authors is evident in the classification of the results: They regard, among others, as a success a patient who died after three months from a relapse, because they rejoiced at first in the improvement of his blood count. One of the patients operated on one and a half years ago is still living and working. It is not evident what disease he had, although such remissions are not uncommon in pernicious anemia.

General weakness, aspiration pneumonia and sepsis from the infected wound were the causes of death following in almost 50 per cent. of the patients almost immediately after the operation. Pernicious anemia seems to account for the death in the successful cases. The method must be regarded as in an early experimental stage and thus far not even promising. Following are references to the scientific articles of the German investigators:

Walterhöfer and Schramm: Treatment of Pernicious Anemia, *Arch. f. klin. Chir.* 118:794-811, 1921.

Walterhöfer and Schramm: Operative Treatment of Pernicious Anemia, *Arch. f. klin. Chir.* 125:407-413, 1922.

Walterhöfer and Schramm: Regeneration of Bone Marrow in Pernicious Anemia, *Arch. f. klin. Chir.* 119:766-773, 1922.

Walterhöfer and Schramm: Surgical Treatment of Pernicious Anemia, *Act. med. scand.* 60:196-210, 1924 (in German).

The foregoing answer betrays very clearly the fact that the *Journal of the American Medical Association* is not giving its readers a square deal with respect to notable European advances. Its discourteous reference to Nascher fails to obscure this fact.

We are asked to further the cause of public education and then condemned for writing articles containing data the importance of which has been missed by the *J. A. M. A.* The *Journal's* attempt to belittle this European contribution and its author, as well as Nascher himself, is a transparent effort, so clumsy as to excite amusement.

We have examined this newspaper article of Dr. Nascher and find that it was strictly educational. Why call it sensational? Are we to refrain from educating the public because of the alleged evil effect upon its emotions? What becomes of all the propaganda in defense of vivisection in this case?

The situation appears to be that a description of what was done to the Toronto dogs which were offered up on the altar of insulin passes the *J. A. M. A.* censors provided it be given by some one accredited and credentialed by the latter. Such a provision reaches the height of absurdity when a man who won his spurs in medicine yeras before his tin-horn critics were ever heard of becomes the object of their attacks.

Notable advances in the treatment of pneumonia or typhoid fever may not be touched upon in the lay press by anyone not accredited by the Chicago autocrats because of the emotional effects upon persons who have lost dear ones through such affections antecedent to the introduction of the newer methods.

Would not any sensible person, not knowing the peculiar standards of criticism of the Chicago pontiffs, suppose that the work of a man of Nascher's caliber in writing educational articles for the lay press would meet with appreciation and approbation?

Another offense of Nascher is that he possesses the faculty of writing popular medical articles which are not dull. This is a most grievous misdemeanor, altogether indefensible in the eyes of the Chicago censors.

Nascher's articles for the lay press are always based upon authoritative medical literature, written in simple style, and notable for their studied avoidance of exaggerations and misstatements. They are substantially such as he might write for medical journals. There is never any suggestion of self-exploitation, and inquirers are always referred to their family physicians.

The *J. A. M. A.*, in its objection to medical education of the public in perhaps the best way that it can be educated, shows the same unprogressive and anti-liberal spirit that it reveals in its opposition to independent medical journalism. Nothing has hurt the medical profession more than the *Jo A. M. A.'s* condemnation of everything that is not in accord with its ancient ethical and financial policies.

It is not reasonable to expect a change to a more progressive and liberal policy on the part of the *Journal* until it is turned over to a younger and more progressive editorial staff, one imbued with the spirit of the day. Until then we must submit to its antiquated views and policies; but these influence the reader of to-day as little as do the editorials in our daily press.

Our Compulsory Education

The Franks boy will not have died in vain if through the reporting of the trial in the daily press a better knowledge of child psychology has been disseminated. Children are understood by only a few experts or persons with a genius for looking into their lives and knowing what forces move them. Yet society dares to guide and direct them, and succeeds only in being brutal and clumsy and stupid.

Through this better understanding of children the problem of the maladjusted adult whose childish fantasies still sway his maturer years would be simplified. The stunted emotional growth of the defective and criminal, as well as the potentially criminal, would signify something to us. Even the real meaning of an adult's lack of self-control is lost upon most people at the present time.

And we must come to know that the proper remedy for these things is not sending a lethal charge of electricity through a delinquent or suspending him by the neck until he is dead, which is only a demonstration of the fact that the affairs of society are in the hands, as yet, of morons.

Miscellany

Conducted by ARTHUR C. JACOBSON, M.D.

A Culminating Test of Credulity

According to credible report, the late Dr. Abrams of electronic fame left a fortune of several millions, possibly five. Well he might! Of all this country's many medical quacks and charlatans he showed the most cynical confidence in the amount of credulity, of gullability, characterizing a considerable fraction of its inhabitants, and for the exploitation of that fraction he devised a scheme of magnificent absurdity.

His statements as to the diagnostic and curative powers of his system and his machines were a wild sequence of perfectly obvious impossibilities. Ordinary inetlligence out of medical circles, and ordinary honesty in those circles, rejected his claims on first hearing. Yet his dupes were numerous all over the country, and there were not a few men with medical diplomas who lent

themselves to the working of the great swindle, merely because there was money in it. Possibly Dr. Abrams was self-deceived as well as a deceiver, but this charity breaks when stretched to cover his professional disciples in "electronism."

The *Scientific American* has just made, or had made, a really expert investigation of the Abrams methods and apparatus. The report—it is not the first of like kind by any means—is the inevitable one that there is absolutely no basis for any of the claims made in behalf of the electronic system of diagnosis and treatment. It is humbug and fake—all of it.

Of course, like all quacks, the Abramites have their "testimonials" of marvelous or miraculous healings after the regular doctors have failed. Some of these documents are forgeries, some of them record temporary improvement and the rest only show what can be done by the power of suggestion in chance selected cases. Suggestions can be made by an Abrams vibrator just as well as by a Coué formula.

Every charlatan has his triumphs; it is to be regretted that his victims cannot be buried in a special graveyard, where they could be counted.—*New York Times.*

Dislocation of Both Humeri

(Concluded from page 219)

4. Murard: Un cas de "luxatio erecta" de l'épaule, double et symétrique. Revue d'orthop., Paris, 1920, vii, p. 423.
5. Gross: Med. & Surg. Reporter, Phila., 1864, xi, p. 82. Reported by Dr. Ludlow.
6. Stimson: Simultaneous Dislocation of Both Shoulders. New York Med. Journ., 1891, liii, p. 311.
7. Lankester: Synchronous Dislocation of the Humeri (Sub-glenoid). St. Paul Med. Journ., 1901, iii, p. 177.
8. Coote: Dislocation of Both Humeri from a Fall. Lancet, London, 1846, i, p. 532.
9. Dislocation of Both Humeri, with Fracture of the Femur. Lancet, London, 1852, i, p. 398.
10. Van Buren: Simultaneous Dislocation of Both Shoulder Joints. New York Journ. of Med., 1857, iii, p. 297.
11. Gueterbock: Ueber doppelseitige Oberarmverrenkung. Berliner klin. Wchnschr., 1885, p. 346.
12. Szczypiorski: Luxation simultanee des deux epaules. Gaz. d. hop. de Paris, 1892, lxv, p. 728.
13. Woerner: Doppelseitige traumatische Oberarmluxation. Beitr. z. klin. Chir., 1886, ii, p. 396.

Urologic Physical Examination

(Concluded from page 220)

Another point in the female is the method of taking specimens for smears and cultures. At least four general anatomical regions should be carefully investigated: urethra, vulva, vagina and cervix. No examination may be regarded as final unless an original and a control set of specimens are taken. The expert applies a massage or rubbing action to his swab in order to squeeze out the contents of glands in contrast with the gentle wiping or dipping action of the platinum loop. A common hairpin, sterilized, is very convenient to squeeze out the urethral glands while this passage is supported between two fingers in the vagina. The hairpin may be rubbed upon a slide and wiped over the culture medium. The hairpin may be used in the cervix of same cases.

There is considerable difference of opinion as to the wisdom of cultures. In the writer's experience and practice, it is remarkable to see the number of physicians who are satisfied with a positive or negative report as to the gonococcus alone, as though this were the only organism of importance of the urinary and genital systems of the male and female patients —adults or children. It is true that the gonoccoccus is difficult to culture, unless the physician has taken specimens often enough to understand the necessary precautions. Inasmuch as there are six gram-negative cocci recognized, it becomes exceedingly necessary to know what we are dealing with, in a certain sense perhaps more in children than in adults.

Dunn & Gordon in the *British Medical Journal*, 1905, listed these six organisms: 1. micrococcus catarrhalis —nasal and pharyngeal discharge; 2. micrococcus intracellularis (meningococcus), cerebrospinal meningitis; 3. micrococcus genorrhoeae (genococcus), urethral discharge; 4. from nasal discharge from Hartford's case of influenza-like epidemic; 5. from nasal discharge from Hartford's case of influenza-like epidemic from urethra; 6, micrococcus melitensis; Malta fever. The mere fact that a discharge does not contain the gonococcus is no reason for abandoning search by culture for the organism which it does contain.

Quotation is worth while from a previous contribution of the author[1] on the subject of bacterial nongonococcal acute urethritis: "The organisms which cause bacterial nongonococcal acute urethritis are streptococci, staphylococci, pseudodiphtheria bacilli and bacillus coli communis in the pyogenic lesions, micrococcus carrhalis in the true catarrhal inflammations treponema pallidum in syphilitic and bacillus of Ducrey in chancroidal, and various organisms in herpetic urethritis.

Luys on this subject says that the most important are the streptococcus, staphylococcus, pneumococcus, micrococcus fullax, micrococcus pyogenes aureus, micrococcus cereus albus, bacillus typhosus, bacillus coli communis, bacillus diphtheriae, bacillus tuberculosis and various sarcinae. A small thin bacillus in chains and clumps is, according to Finger, referred to by Luys, the common saprophyte of the prepuce and very often in the urethra in long-standing cases. Moscate reports a case of urethritis accompanying every attach of intermittent fever."

From these suggestive teachings of Luys it follows that the expert no longer is satisfied with the presence or the absence of the gonococcus but insists on knowing what the organism present is, because a nonbacterial mucous discharge is by no means uncommon and arises from thermal, chemical or phyical damage of the mucous membrane. The slogan of modern thoroughness in urological diagnostics is: "Be ever on the alert for the unexpected, the deeply-seated and the difficult." On the other hand, the usual result of such insistent endeavor is very often a definite explanation of chronic and perplexing symtoms, a promise of benefit and an occasional opportunity for definite cure. As in any other field of human endeavor, care and conscientiousness are almost always rewarded.

45 West Ninth St.

[1]A textbook of Urology, 1919, page 22.

A Poor Opinion of Father

The daughter of a western hospital superintendent saw a cat carrying her kitten by the nape of its neck. The sight made her angry.

"You aren't fit to be a mother," she cried scathingly, "you aren't hardly fit to be a father!"

Some man who has lived long enough to acquire much wisdom says, "Dissipation is a pygmy compared to over-eating, lack of exercise, irregularities of sleep, work, and play."

An old physician was noted for his brusque manner and methods. A woman called him to treat her baby, who was slightly ailing. The doctor prescribed castor oil. "But, doctor," protested the young mother, "castor oil is such an old-fashioned remedy."

"Madam," replied the doctor, "babies are old-fashioned things."

Cancer

(Concluded from page 226)

Our ancient cult of medicine is so redolent of ignorance and superstitition that we who are part of it had best never give opposing opinion to new thought until subjection of the specimen of mental effort to the microscope of intelligent reason. The name "malaria" (bad air), in this respect carries a sermon of caution which quick minds will grasp.

Malignancy, whatever its form or name and regardless of age, sex, or rapidity of progress, is typical example of life living upon life—and destroying it if invading force be strong enough to overcome innate resistancy.

We apply water to extinguish the fires of a backyard brush pile which threatens to spread. We smother the flames of a burning dress ignited by chance contact with a kitchen stove, by use of a handy blanket. We throw sand or gravel upon our burning motor when back-fire makes ignition of an oil surface. Let us then use the same common-sense in fighting the fires of cancer prevalency.

Cancer's cause is extrinsic. It is an exhibition of life living upon life. Protozoa are the causative factors in all malignancy as we use the term. My fixed belief is that the protozooic germ, Trichomonas, is the parasitic cause of carcinoma and sarcoma as we know them.

Treating these minute globulin-feeding, internal body lice for just what they are and recognizing that broad Nature creates remedy as well as disease, let us apply antidotes.

What are the antidotes? Well, let us in farmerish fashion consider the ham that is cured in the rural smoke-house. That fresh ham you know would decay and become malodorous if it weren't cured. The curing in its rural way destroys some form of "life living upon life" which, unless destroyed, would render useless the thing it is desired to preserve.

We could engage in long dissertation at this point upon use of the rare spices of Biblical times and might contemplate with benefit specimens of Egyptian mummification in our museums. Space shortens such discussion.

If we were generally better informed we could well consider the thoroughly proven antisepsis of such food condiments as mustard, cinnamon and clove in their relation to digestive economy—things on which the medical mind is vacant. Sticking to our subject of malignancy, however, let us apply similar principle—that of preserving living or non-decayed flesh against inroad of destructive parasitic presence.

The task is to provide an internal parasiticide which while destroying the invading form of life which seeks to eat up its host, must at the same time have that parasiticide in such form that it will be selective in its attack and not destroy the host itself in its general massacre of the invader. Fortunately that appears to have been accomplished. AO, the preparation referred to in former articles, completes the purpose, gently and without reaction. Yet so potent is this combination that its extremely volatile fumes bring death to grosser as well as more minute vermin when released in a closed chamber.

The secret of destruction of cancer germ presence in the human organism under administration of AO is no more a secret than any common procedure of sterilization or fumigation. There's a bug to kill. How to do it without spoilation of wall and rug and furniture is the question. In the *human house,* means have been discovered through employment of well known vegetable substances effectually used in medicine since the days of Hippocrates progenitors.

Upon some such isotonic form as AO represents in this medical combination does result rest. Was the formula given publicity, there would at once commence an orgy of amateur compounding extending from simple mechanical mixture to latest discoveries in colloidal combination which, under administration, would not only excite the attention of specialists in nephritic disease but would so damn a ten years' serious effort as to make its originator a medical pariah.

That will be discussed later. For the present let me say the entire procedure of AO's preparation is carefully safe-guarded for the profession. Men of professional eminence and unassailable probity know its components. It is not proposed however, to jeopardize a professional discovery of such demonstrated importance by promiscuous dispensation of its technique of preparation, either to students of pharmacy or to self-elected arbiters of medical destiny.

12 Fifth Ave.

Milk

(Concluded from page 225)

the requirements of a substitute for breast milk for the general run of average feeding cases, as does the modified formula. In as much as nearly all pediatrists recommend the use of orange juice and some form of cereal gruel at the proper time, and liberal amounts of sunshine, fresh air, and exercise—these factors should be given due consideration when prescribing condensed milk.

It has been demonstrated beyond any doubt that condensed milk per se is not the cause of rickets. Dr. J. Lawson Dick of London points out that there is no evidence substantiating the claims made that condensed milk causes rickets. He further points out that condensed milk is exceedingly well digested, and that the standard grades contain all of the original butter fat of the milk.

Biological experiments made by Lichtenthaler, Smith and Hawk of Jefferson Medical College showed that rats having severe rickets were cured by feeding condensed milk.

As to scurvy—Dr. M. J. Rosenau of Harvard Medical School, in his article, "Vitamins In Milk," refers to the evidence furnished by Alonzo Taylor that condensed milk was used in the war zone, and not only prevented scurvy but cured it.

As to cane sugar—Von Pirquet of Vienna points out that infants were fed from birth to the twefth month with centrifugalized skim milk without demonstrable disturbance which could in the slightest degree be related to the food. The fat was replaced by equivalent amounts of cane sugar. Nothing was noted even as regards the lessening the immunity to infectious disease.

Smith and Carey of Yale University, summarize the findings of their experiment as follows:

"Rats making comparable increments of growth in the same time consume nearly the same number of calories from diets high in fat, high in carbohydrate, or from intermediate "balanced" diets. Rat on the high carbohydrate food grew normally throughout the period of observation (151 days), but animals on the high fat ration failed to maintain the normal growth rate after 50 days."

The usual failures with a modified formula can be traced to faulty technique in the preparation of the feedings, or the child's inability to handle the prescribed formula. With condensed milk there is

not much opportunity for faulty technique in preparing feedings. If the mother feeds condensed milk to her baby, without any understanding of the importance of general and personal hygiene, correct measurements, and regularity the chances are that the baby will not do well. The results would be just as unsatisfactory if the mother had tried to make up a modified formula with the added danger of using contaminated or poor quality milk, perhaps both.

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Smith, A. H., & Carey, E. (Yale), "Growth On Diets High In Carbohydrates and High In Fat." The Journal of Biological Chemistry, December, 1923.

Arterio-Sclerosis of the Kidney

(Concluded from page 224)

In a very late number of the *Journal,* we learn that the blood ammonia loses its formerly deemed significance, and that the kidney manufactures and eliminates the ammonia present in the urine, this irrespective of the ammonia in the blood content. Normally this function of the renal parenchyma is shown to be about one gram of ammonia to the liter of total acid, but this is lessened in cases of nephritis and in diabetics who have nephritic complication, due to the function being curtailed or altered and allowance of cell permeability of basic substances, the osmotic function of the renal cell being altered.

This finds substantiation in the recent investigation of the kidney tubules of animals wherein the parenchymatous cells were found to have a reaction opposed to that of the urine excreted, as when the urine was acid, the reaction of the cells of the parenchyma was alkaline, and vice versa. However, in an abnormal condition of the cells, as in the presence of damage from nephritis, the reaction of the cell was always acid regardless of the reaction of the urine.

The entire study and process would then seem to merit the conclusion that amino products and acid urine are not instrumental in effecting a sclerosis of kidney substance, but rather it becomes the effect of a process, which it is but fair to believe, is toxic from infection and from proteid activity in excess, occasioning the amino products and the arterio-sclerosis deposit.

It would seem that we can find material substantiatiton for this conclusion in the *British Medical Journal,* March 22, 1923, wherein Shaw in entering his objection to the use of the term arterio-sclerosis, described two forms of arterial attack, recognizable clinically as, "(a) hyperpiesia and occupational tortuosity and hardening due to hypertrophy of the media, and (b), tortuosity and hardening independent of hyperpiesia and occupation, but due to infection which causes formative inflammation of the coats of the artery as shown by cellular proliferation and cellular exudation. Other forms of arterial change which defy clinical detection are arterial degeneration affecting the intima (atheroma), and degeneration affecting the media." One becomes impressed with the belief that subsequent experiment and conclusion will show the production of ferment or the creation of precipitins instituted for specific protection against toxic effect of the protein radical in the system, derived from whatever the source may be, tending to overproduction and misdirected function, resulting in uncontrolled or excessive deposit of cellular exudate, seeking vessel damaged by toxic effect, has modified the chemic reaction or ionic integrity of the parenchymal cell. In consequence, there is shown a departure from normal kidney function of denitrogenation or deamination of products created by infection or toxic protein effect.

Continental authority today concerts in the advice that iodine has little effect upon arterio-sclerosis other than that of luetic origin. This forces the conclusion that thyroid activity is inhibited in syphilis, occasioning the belief that here it is due to spirochetic persistence as a foreign or parenteral toxic proteid or infective product, present in serious amount over a continued or uncontrolled period, enacting a degenerative process in the kidney, locating an occult expression, unseen but none the less known. How far investigations will subsequently determine the entire process of arterio-sclerotic development as a hypothyroid state, time alone will reveal, but the trail leads in that direction, and the resolution of the process effected by Fishberg in the article mentioned, promises material solution of the problem.

The fact that we are warned by authority that thyroid extract aggravates arterio-sclerosis, should keenly arouse us to the danger of suddenly awakening a thyroid activity in an economy which has labored to an end of substitution, that thyroid administration must be most intelligently directed by use of a specific preparation as thyroxin, its effect being most carefully watched.

Medico Legal Reflections

(Continued from page 232)

plication to the mentally unsound. As before stated, the Revised Code of Criminal Procedure of the State of New York, Section 21, defines insanity in practically the same terms as those used by the English judges in the McNaughten case. Thus it appears that our lawmakers blindly following the dictum of Lord Hale and his successors on the English bench, and ignoring the teachings of medical science, have undertaken to determine by statutory enactment what insanity is and to define the conditions of responsibility in mental disease by declaring in law what shall be rather than what is, and have thus given us a test which is based on a misconception of the true nature of insanity, and so narrow in spirit and so untenable in reason that every experienced psychiatrist must regard it as artificial, arbitrary and fraught with danger to humanity and to the ends of justice. The great constitutional lawyer, Macauley, declared that the besetting sin of judges is the tendency to make law in place of stating what the law is. "The true test of irresponsibility," says Forbes Winslow, "should be, not whether the party accused is aware of the criminality of his actions, but whether he has lost all power of control over his actions." "Make the man's power of controlling his actions the test," says Clouston. "With that view every medical man will agree."

Hence, it would appear, if medical science is correct, that the real question of fact for the jury to determine in criminal trials where insanity is alleged, is: "Did the accused at the time he committed the act of which he is charged have sufficient mental capacity to appreciate *rationally* the nature and consequences of the act he was committing, and, if so, did he have sufficient power of will to enable him to choose between doing it and not doing it? It must be admitted that a correct solution of this question, involving, as it does, human life and liberty, is of vital imporance; and inasmuch as it relates directly to disease the facts upon which its solution depends can properly be interpreted for the jury only by competent medical testimony. If this were done it is believed that much of the conflict of opinion in our law courts respecting the question of responsibility in criminal cases where insanity is offered as a defense would disappear.

(To be Concluded)

The Parathyroids

(Concluded from page 234)

in conjunction with calcium lactate in 15-grain doses. He has since tried this treatment with much success in other cases.

Priston suggests that a similar reasoning may apply to pernicious anaemia, which may be due to abnormality in the calcium metabolism and parathyroid deficiency. Sir Byrom Bramwell comments on Priston's note and suggests that parathyroid therapy be given a trial. At the time of writing he had tried it in one case, but the patient was already moribund and no chance was offered of giving the treatment a proper test.

Harrower calls attention to the calcium loss which is characteristic of tuberculosis, and suggests that parathyroid therapy should be a reasonable addition to the treatment of that disease. He urges its trial especially as parathyroid has been shown to have a definite curative effect upon other kinds of ulceration.

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Goetsch's Adrenaline Test

Vaquez and Dimitracoff have used this test on fifteen patients. They take the pulse and blood pressure before and every two or four minutes after the injection of adrenaline; the readings are charted and any subjective disturbances noted. The result may be positive, partially positive, or negative. It is positive when at least three phenomena are observed: delayed tachicardia, rise of systolic pressure, and definite subjective disturbances—pallor, vertigo, palpitation, etc. The authors classify their cases according to the degree of positive reaction, which indicates the degree of hyperthyroidism present and the necessity or otherwise for further treatment. They conclude that the test is a true biological reaction and a real aid to prognosis.

Lieb and Hyman state that the reaction to adrenaline as measured in the response of blood pressure varies widely with the condition of the subject. Apparent sensitization by adrenaline may develop or persist even in complete absence of thyroid glands. Their observations indicate that the reaction is due to alterations in the peripheral structure of the involuntary nervous system rather than to changes in the thyroid gland. Murray Lyon reviews the position of the adrenaline test and comes to the conclusion that a negative finding is valuable in definitely excluding hyperthyroidism; a positive result is of less significance since it is frequently obtained in cases where no evidence of overacting thyroid exists. He tried the test on a number of patients and found that no relationship exists between the metabolic and cardio-vascular responses to adrenaline in patients having similar B. M. R., but a change in the degree of response is noticed if individuals are examined on different occasions when their metabolic rates have altered. Administration of thyroid causes an exaggeration of the reaction to adrenaline. In cases of exophthalmic goitre a fall in B. M. R. is not accompanied by a very great reduction in the sensitiveness to adrenaline, and it is suggested that this depends on a persisting hypertonus of the sympathetic system.—*B. M. J. Expit., Oct.*, 1923.)

Vaccines in the Treatment of Pruritus Ani

Bacterial infection of the skin in a pruritic area is liable to occur in all cases, said J. F. Montague of New York, at the 1924 American Proctologic Society. That it does not occur in 100% of the cases is due either to efficacy of the local barriers, to invasion, i.e., the resistance of normal skin and mucosa to invasion, or to the efficacy of the immune powers of the body cells and plasma fluid to resist such invasion. When pruritus continues for any length of time the local barrier to infection is weakened or broken by the scratching and rubbing incidental to efforts at relief from the itching. This may be observed clinically in the form of excoriations or crosions. With such breaks in the skin bactorial invasion is rendered easy. The only factor which can prevent infection then is the immune powers of the cells and plasma fluid. When this is normal, invasion is successfully resisted. When it is not up to normal invasion is certain to occur. Hence the author urges the use of suitable vaccines in all cases of pruritus showing excoriations or abrasions. The object of such vaccines is to increase immune bodies to such an extent as to successfully resist and destroy invading bacteria. In such a situation the use of vaccines is an auxilliary curative measure.

But to go one step further in the intelligent use of vaccines;—they may be used as prophylactic against invasion in every case of pruritus for the reason that then should excoriations or erosions occur the immune bodies will be preponderant from the start and invasion will be rendered less likely. The author uses successfully a vaccine of those organisms which his bacteriological researches have proven the causative agents in such invasion, namely the Staphylococcus albus and B. Coli.

The Physician's Library

Maternity Nursing in a Nutshell—By Elizabeth H. Wickham, R. N., New York. 167 pages. Philadelphia: F. A. Davis Co., 1924.

The name of this book tells the story. It is full of information which is of interest to the public. To those interested, it cannot but prove of value.

As a Doctor Sees It—By B. Liber, New York. 189 pages. New York: The Critic & Guide Co., 1924.

This is a series of short stories. Some are snappier than others and doubtless all of them portray human life as seen in a great city.

Diabetes—By Orlando H. Petty, M. D. of the University of Pennsylvania. 111 pages. Philadelphia: F. A. Davis Co., 1924.

The author has prepared this book for the use of the patient. It gives the method of calculating a dietary and also shows how to prevent the disease. It naturally contains more or less on insulin and is a very valuable little manual for those interested.

A Diabetic Manual—By Elliott P. Joslin, M. D. of Harvard Medical School. 211 pages. Philadelphia and New York: Lea & Febiger, 1924.

The third edition of this manual intended for the use of physician and patient brings the subject up to date. It demonstrates what diet and insulin can do in diabetes and as such is a very useful compendium.

Fighting Foes Too Small to See—By Joseph McFarland, M. D. of the University of Pennsylvania. Philadelphia: F. A. Davis Co., 1924.

The purpose of this book is to give a popular touch to a rather abstruse subject. The author has done his work well. The contents of the book are really based on lectures delivered at the Wagner Free Institute of Science at Philadelphia. Physicians will find the volume interesting because it refreshes the memory, and the public can read it with great profit.

A Study of Masturbation—By John F. W. Meagher, M. D. of Brooklyn. New York: Wm. Wood & Co., 1924.

The author of this book is a distinguished neurologist and anything which he may say can be regarded as authoritative. He takes up the habit and its reputed sequelae. He finds that it is universal among infants, very common among both boys and girls and in adult life is more practised by women than men. He finds that the harm following excessive indulgence is more mental and moral than physical. Thus another one of our popular delusions, that masturbation results in insanity, is shattered.